Architecture as Icon

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The growing body of literature on Byzantine art during the past several decades has substantially ignored the phenomenon of representations of architecture in that artistic tradition. Conscious of this major lacuna in scholarship, the organizers of the exhibition *Architecture as Icon* have sought to redress the problem by offering a broad analysis of implicit issues. This essay offers an introduction to the subject. In it, exploring the role of architecture as depicted in Byzantine art is seen as inseparable from exploring the very nature of perception and representation in Byzantine artistic tradition. Likewise, the relationship between architecture and icon, the quintessential artistic product of Byzantine art, is seen as being of far greater relevance than previously imagined. The very process of analysis underscores the fundamental need to understand how the Byzantines perceived their architecture and on that basis to decode the purposes for its representation. Beyond that, such representations enjoyed a meaning and status equivalent to those of the saints depicted on icons as primary objects of religious veneration. This seemingly radical proposition requires close scrutiny of evidence, all the more so because the topic as formulated here has never been articulated in scholarship on Byzantine art.

HISTORIOGRAPHICAL ROOTS

Historians of Byzantine art, and others who have written about it, have long noted that pictorial compositions in Byzantine art often contain representations of architecture in the background. But the scrutiny of these representations has usually gone no further than noticing their existence. Occasionally, they have been subjected to closer examination, generally with negative conclusions about their value and real meaning. The most common, if noncommittal, observation has been that they are just background, almost arbitrarily chosen, space fillers of little significance—one might say, not unlike decorative wall paper. Only rarely have scholars chosen to analyze these representations, recognizing in them some aesthetic merit.[1]

Aesthetics in Byzantine art is a subject that was barely broached in Western historiography before the 1980s.[2] Since then, however, this vast landscape, once terra incognita, has been charted by explorations of wide-ranging topics.[3] Important inroads in the realm of aesthetics in Byzantine literature have also been made in recent decades, but

Detail of cat. no. 41. Icon of Saint Simeon Stylites with episodes from his life and miracles.

the nature of links between literary and artistic practices requires further exploration.[4] The present exhibition and, accordingly, this essay, pursue a new approach to the subject, one that bears in mind the crucial relationship between disciplines as modern scholarship has defined them.

While the study of Byzantine art in the West has flourished in recent decades, the discipline is still relatively young. Its efforts, even at the outset of the twenty-first century, are burdened by past misconceptions of long standing. Within the discipline of art history that emerged on the coattails of the Enlightenment, Byzantine art acquired a low rank compared to major artistic developments in the West. The actual intellectual rift between Western and Eastern Christian thought playing a key role in this development, however, had occurred much earlier, in the fifteenth century. For a long time, scholars assumed that the date of the fall of the Byzantine Empire to the Ottomans in 1453 marked the end of Byzantine artistic production. More recent scholarship, however, has accepted a different point of view, that the conquest of Constantinople by Mehmed II on May 20, 1453, was a date of exclusively historical significance and of limited import as far as the continuity of the Byzantine artistic tradition is concerned.[5] Notwithstanding the rectification of this erroneous concept, the significance of broader changes that did take place in the course of the fifteenth century and their ultimate ramifications for understanding Byzantine culture and art are yet to be adequately assessed. To put it in the simplest terms: at the same time that Western Christendom witnessed the dawn of a new era, the Renaissance, large geographic territories of Eastern Christendom were incorporated into a new empire, the Ottoman, dominated by the religious framework of Islam. Limited points of contact between the two Christian worlds, now developing under thoroughly different conditions, did exist and occasionally even reached flourishing levels, as was the case under the auspices of Venice with its long-standing ties to the East. Venetian readiness for appreciation or assimilation of Eastern ideas, however, was quite limited, as was the process in the opposite direction. Despite a favorable market for the large-scale importation of icons and despite the economic stimulus that these conditions may have had on the places of icon production (most notably in Crete), the two aesthetic traditions remained substantially distant from each other. Economic ties between Venice and her newly acquired colonies could, on the face of it, be perceived as an end of the adversarial relationship between the worlds of Western and Eastern Christendom. This, however, would be a false perception. Eastern Christian theological positions on matters pertaining to the nature of faith as expressed in art had not changed in any substantive sense.

The chemistry of East–West relations a century after the Ottoman conquest of Constantinople was significantly altered, albeit not instantly, by yet another event of major historical importance that took place in 1547: the creation of a new Christian empire—that of Russia—and its claim to have superseded the leadership of the fallen Byzantine Empire in matters of religion, culture, and politics. Moscow, the capital city of the new empire, with its massively fortified Kremlin filled with palaces and gleaming, gilded multidomed churches, mythically proclaimed itself the Third Rome, replacing Constantinople in its traditional role as the Second Rome, thus resuscitating, if almost

imperceptibly at first, the "cold war" between the Eastern and Western Christian worlds that had simmered for over a millennium prior to 1453.[6]

From the historiographical point of view, it is of considerable interest that merely a decade after the proclamation of the Russian Empire, in 1557, the name "Byzantium" was, if not first coined, then certainly introduced in the West as a way of scholarly reckoning with the defunct erstwhile Eastern Christian empire and its capital Constantinople. Since the official inauguration of Constantinople by Emperor Constantine I in 330, the rulers of this empire had seen themselves as the legitimate heirs of the Roman emperors, continuing to use the name and referring to their state as the "Roman Empire." All of this changed retroactively with the reintroduction of the ancient name "Byzantium" as the name of the Empire (whose officials never used it in documents). The fictive name, however, imperceptibly stuck and continues in use.[7] Distinguished by its own Orthodox form of Christianity and culture, but also sharing common Roman roots with its Western Christian counterparts, the Eastern Roman Empire, now renamed "Byzantium," became a subject of historical studies dictated by its former adversaries with a fundamentally different philosophical outlook on the world. While the precise reasons behind the invention of the name Byzantium in its current use remain murky and cannot preoccupy us further in this context, the name itself has had lasting, often questionable effects that we must take note of and address, even if only briefly.

Virtually simultaneously with the invention of the name Byzantium came the first critical, or better said, disparaging assessment of Byzantine art. Writing about the training of the painter Cimabue (active ca. 1272–1302) in his *Lives of the Painters, Sculptors, and Architects*, Giorgio Vasari, the acclaimed "father of art history," acknowledged that Greek painters were brought to Florence (one could surmise from Constantinople, which was in Western hands from 1204 to 1261) "to restore to Florence the art of painting, which was out of mind rather than out of fashion."[8] Yet these Greeks who, "giving no thought to making any advance, had made those works in that fashion wherein they are seen today—that is, not in the good ancient manner of the Greeks but in that rude modern manner of those times."[9]

Renaissance humanists, whose numbers included Vasari, showed little or no understanding of or interest in Byzantine art. Yet, on occasion, they did not hesitate to appropriate ideas from the Byzantine tradition, adapting them freely but selectively to their own needs. Constructing their own philosophical visions in theoretical tracts, they went out of their way to point out "inadequacies" and outmoded viewpoints of their Greek counterparts. This negativism of the early humanist writers became an integral part of the general legacy of Western writings on the history of art. "Byzantine art thus became marginalized and excluded from a genealogy, not unlike what Vasari invented: a continuous evolutionary history spanning late antiquity and the Baroque period in the countries that became powerful modern Western nation-states."[10] Notwithstanding some more constructive recent efforts among Western art historians, Byzantine art continues to be perceived predominantly in terms of its oriental exoticism, as a product of that "other" world associated with Eastern Christianity.

One of the common observations about the depiction of buildings in Late Antique and Byzantine art is that they generally seem to shun certain pictorial conventions

familiar in late medieval Western, and especially Renaissance, art. This introduces one of the more hotly debated, and still not fully resolved, problems in Western art theory: the origins and the meaning of perspective.[11] This is not the place to explore this issue, as important as it may be in the historiography of Western art. Yet, we must reckon with perspective as one of the most damaging analytical tools in the formative stages of Western historiography in dealing with Byzantine art. Western scholarship has tended to embrace the early humanist criteria as the only pertinent ones for judging visual renderings of space in art. Their judgment that the absence of perspective and the presence of highly stylized, frontal depictions of human figures denoted the shortcomings of Byzantine painters has unfortunately persisted into modern times and, to a degree, is still considered relevant. Western-trained Eastern European scholars, too, have implicitly and often uncritically consented to accepting perspective as a normative way of representing space. Applying this point of view, they clung to theoretical concepts—such as the so-called "inverted perspective"—with hopes of making the phenomena in Byzantine art they were trying to clarify compatible with Western standards.[12] Their failure underscores the need to understand the Byzantine theoretical framework on its own terms. Only then will it become abundantly clear that "inverted perspective" is neither inverted nor perspective in the Western sense. It is simply a totally different manner of conceptualizing form and space.[13]

The historiographical outlook on this problem has had a different evolutionary path in Russia. Having postured as the legitimate heir of the Byzantine tradition after the fall of Constantinople, Russian religion and culture effectively developed and functioned in accordance with this ideological postulate. While religious and cultural life of other Eastern Christian nations cannot be said to have completely withered under Ottoman rule, the conditions for their survival in those areas were not favorable and certainly did not foster the expansive, self-confident growth witnessed in Russia. Despite Russia's occasional economic and cultural contacts with the West, its growth and expansion generally placed it in a protracted adversarial relationship with the Western sphere through much of its own history. Championing substantially the same religious and cultural values as those of the Byzantines, the Russians also preserved the greatest sensitivity in intellectual matters pertaining to the study of Byzantine aesthetics, becoming virtually the spokesmen on the subject. Thus, over the past century and a half, a different historiography of Byzantine art evolved in Russia than in the West.[14] Notwithstanding the substantial slowdown in these matters that occurred during the seven decades of the Soviet regime, the intellectual potential in the area of Byzantine studies survived and re-emerged with a new generation of Russian scholars whose views are often strikingly different from those held by their Western counterparts. These differences are less methodological than philosophical in nature. Consequently, it is of little surprise that the subject of Byzantine aesthetics should have received its most serious consideration in the Russian context.[15] It should also be noted that the younger generation of Russian scholars, despite their receptivity to Western scholarship following the fall of the Soviet Union, has demonstrated a degree of philosophical independence that has not met with wide understanding and intellectual reception among their Western colleagues.[16]

THEOLOGICAL UNDERPINNINGS

The Byzantine aesthetic canon is intimately based on the Byzantine understanding of the universe. Early Christian and Byzantine art, deeply rooted in Neoplatonic philosophy, gradually rejected the realism of the Graeco-Roman pagan variety as a pictorial standard.[17] The Byzantine theory of picture (εικών) and symbol sought to embody common spiritual values. Thus, one might say, Byzantine art aimed at portraying the invisible (spiritual) by relying on the visible (visual) means. This apparent paradox, at the very root of the differences between Western and Byzantine perceptions of art, intensified in the later Middle Ages, and especially during the formative stages of the Renaissance. The crucial point is that the Byzantine conception of aesthetics in art is not at all related to the Western one. For Westerners, art was a means of representing reality and at times even bettering it, while for Byzantines, art was never an end in itself, but a facilitator of access to the spiritual world, the indescribable, non-containable universe of the divine spirit. Picture, as a visible object, was necessitated only by limited human capacities of spiritual seeing. Thus, in the world of Eastern Christianity, the icon was (and still is) a means for spiritually crossing the divide between the earthly and the heavenly domain.

Issues inherent in these matters, as old as Christianity itself, led to lively debates as early as the fourth century, but their final synthesis probably took place about A.D. 500 in the work of an unknown author remembered only by his pseudonym, Dionysios the Areopagite. Of marginal significance in central theological debates of his time, Pseudo-Dionysios made major contributions through his sharpening of principles that eventually become the backbone of Byzantine aesthetics.[18] For him, the symbol (σύμβολον) was the broadest philosophical-religious category, the overarching concept that included the meaning of picture, sign, representation, and beauty, but also of the human body and its parts (at times signifying spiritual or divine powers), aromas, liturgical functions, and, above all, the Eucharist. Thus, according to Pseudo-Dionysios, the preeminent role of any symbol is its power to reveal and conceal simultaneously; absolute beauty is not external, but is internalized, accessible only to those capable of spiritual seeing.[19] Furthermore, a symbol can have multiple meanings that are revealed only by the context within which it appears. Finally, it was Pseudo-Dionysios, who was responsible for the most extensive and most influential formulation of the meaning of light (φῶς), not only in the Byzantine world, but also in the medieval West.[20] Light, according to him—and like all other symbols—has both visible and invisible aspects. It, too, exists on the borders of the earthly (physical) and the divine (spiritual) spheres.[21] Spiritual, divine light dwells within pictures (εικόνες), and is thus made accessible to those humans capable of spiritual seeing. Beauty, according to Pseudo-Dionysios, is an agent of light—"beauty shines"—while light itself retains a broader and deeper spiritual meaning.

Later Byzantine thinkers further articulated this conception of light. Thus, to Gregory Palamas, writing in the fourteenth century, the light of Christ's Transfiguration on Mount Tabor was the highest form of light information—simultaneously visible and invisible, thus demonstrating the "visibility" of God, not in essence, but as

"energy."[22] The question of the visibility of God is one of the most difficult issues that Byzantine theologians had to address. Rooted in the Old Testament tradition, where it is consistently and unequivocally described as an impossible proposition, it received a very different, modified approach in Christian thought.[23] The birth of Jesus, son of God, through the instrument of Incarnation, made manifest the notion of God's limited visibility. Accordingly, the eternally invisible God chose to make himself partially visible to humans through the agency of the Holy Spirit and a young virgin named Mary, who gave birth to his divinely conceived son, Jesus Christ. According to the New Testament teaching, Jesus, living on earth, mingled with humans, preaching and performing miracles, and was ultimately arrested, tried, sentenced, and crucified. His martyrdom and death took place in order to ensure the redemption of mankind. Buried, he was miraculously bodily resurrected and taken to heaven, where he sits enthroned next to his father. Thus, the tradition of the New Testament presented Early Christian and later Byzantine theologians with new avenues along which to interpret God's visibility versus invisibility.

As Christian art evolved, theological teachings substantially defined the role of religious art and, by extension, the meaning of aesthetics in this context. Lasting disputes, even a form of civil war (Iconoclastic Controversy) that raged for more than a century over the meaning and the function of human representations, ultimately defined the idiosyncratic nature of Eastern Christian art in contrast to the two major religious traditions that, historically speaking, flank it: Judaism, its historical precursor, and Islam, its chronological follower. The ultimate Byzantine definition of the meaning of icons, in fact, is the result of a period of prolonged theological debates and social turbulence. Efforts to dispel the accusation of idolatry, directly associated with pagan beliefs and practices, led to theological formulations pertaining to the meaning of images (icons), among which that of Saint John of Damascus (ca. 650–750) is best known. According to Saint John, the icon is similar to the prototype, but different from it in substance, just as Jesus is a "natural image" of, but not identical to, God the Father. Jesus, the first and only natural image of the invisible God, according to Saint John, was God's body image made by him to "dress himself in," having made the decision to make himself partially visible to humans.[24]

The Seventh Ecumenical Church Council, held in Nicaea in 787 and marking the end of the Iconoclastic Controversy, confirmed the teachings of Saint John of Damascus regarding icons. According to the acts of the council, the invisible God could not be, and never was, depicted. It was only through his incarnate son, Jesus Christ, that God revealed himself to mankind.[25] Furthermore, the notion of reproducing images began, according to church tradition, with the Mandylion, a towel upon which Jesus miraculously imprinted his own face.[26] The legend of this miraculous transfer of the sacred image was embraced as a central justifying argument in the battle for the preservation and propagation of icons as ultimately codified by the Seventh Ecumenical Church Council and celebrated thereafter as the "Triumph of Orthodoxy" among the Eastern Christian Churches.[27]

CHURCH ARCHITECTURE AS ICON

Our most extensive and clearest ideas about the meaning and the role of architecture in the Eastern Christian world are based on church buildings. This is not only because churches constitute by far the best-preserved body of Byzantine architectural heritage, but also because the surviving textual evidence is likewise devoted predominantly to matters pertaining to ecclesiastical buildings. From this emerges the realization that a church building, not unlike an icon, was perceived simultaneously in material as well as in symbolic terms. The history of Eastern Christian church architecture from its beginnings to our own times reveals an unaltered dual concern for providing a place for the assembly of the community members, while simultaneously conveying the symbolic expression of God's invisible and uncontainable realm. Thus, even the earliest developed church type, the basilica, based on the model of an imperial assembly hall, satisfied this dual role of providing covered space for a large body of people while at same time alluding to divine presence through features such as the altar table, which symbolically denoted God's throne. The physical role of a container of the community members was thus paradoxically juxtaposed with the symbolic role of the container of God's uncontainable realm.

Such dual perception of architecture is most eloquently illustrated by a fifth-century lamp in the form of a basilica, discovered in Orleansville, Algeria (fig. 1). Greatly reduced in scale, the bronze object has all the characteristics of a timber-roofed basilica. Yet, what we see are only the nave and the apse of such a typical basilica. Its side aisles and narthex are not depicted at all. Thus, the image of the basilica is reduced to a nave covered by a pitched timber roof, its sides open on both sides in four arcades carried on five freestanding columns, above which rise clerestories perforated by rectangular windows outfitted with transennae. Similarly, the semicylindrical wall of the apse supporting a semidome is perforated by large arched openings carried on columns that rest on the same level as the nave arcades. While the general appearance of this architecture and its details are certainly relatable to real architecture, one is left with an unmistakable impression that what is shown represents a nonfunctional building. An idea about how this would have looked may be gleaned from a partially destroyed fifth-century church at Kharab Shams in Syria, in which we see, by virtue of the nature of its destruction, its architecture as consisting only of the once-roofed nave and apse (fig. 2). The maker of the fifth-century lamp-basilica most certainly was not aiming at depicting such a building ruin. His goal was very different. By removing the outer aisles and the narthex, he was able to show simultaneously the exterior as well as the interior of a basilica, and in so doing, reveal the function of the church by depicting its altar within the apse. The object as we see it, we must remind ourselves, was made as a lamp, outfitted with ten lamp-holders and chains whereby the entire object could be suspended, presumably within a church interior. We do not know which church this would have been, nor do we know whether the church in question resembled the lamp-basilica at all. The relationship to real architecture, however, cannot be denied. From the foregoing, we conclude that the lamp-basilica was a symbol associated with light, signifying the source of divine light in the same symbolic sense

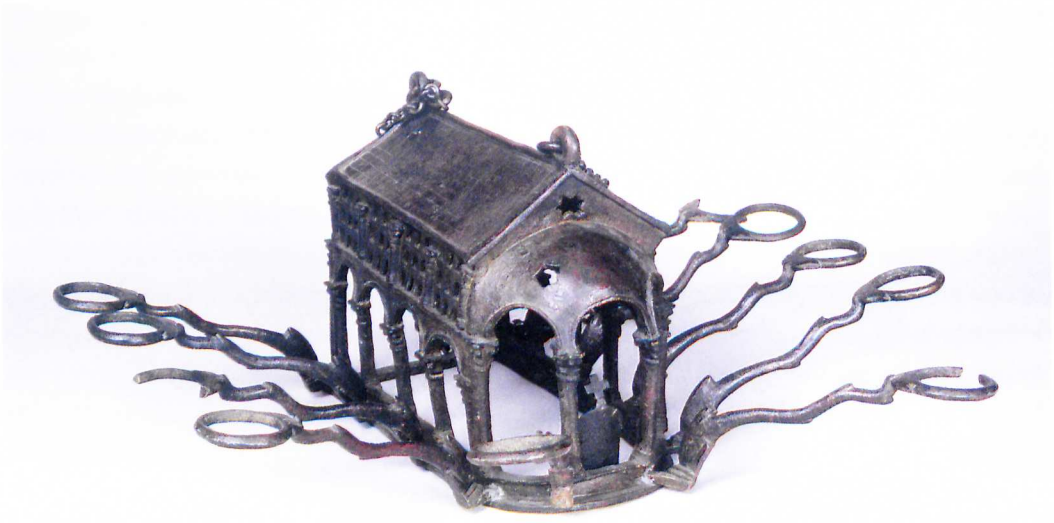


Figure 1. *Polycandelon* (lamp) in the form of the nave and apse of a basilica, found near Orleansville, Algeria, 5th century. Cast bronze; l. 26 cm., w. 34 cm., h. 17 cm. State Hermitage Museum, St. Petersburg (0071).

Figure 2. View from the northwest of the Basilica at Kharab Shams, Syria, 5th century.

that a real church does, not merely by virtue of its form, but also by virtue of its various architectural elements (windows, the apse as a seat of authority, etc.). The real church, however, also accommodated real functions (the sacred liturgy, the reading of the Gospels) to which the lamp-basilica could only allude. Their identical symbolic role expressed in the common language of architecture here underscores the point of central importance: the vast difference in scale between the real basilica and its bronze counterpart demonstrate the irrelevance of physical scale in symbolic expression.

Another theological perception of church architecture is expressed through the human metaphor. In his magnum opus, *Church History*, Eusebios of Caesarea (ca. 260–339/340) described the church building in metaphorical terms, as a "living temple" constructed by Christ, the Son of God. According to Eusebios, Christ used people

gathered from everywhere as "living and moving stones," which he placed securely "upon the foundation of the apostles and prophets."[28] Thus, by using "hard and strong spiritual stones," Christ made "the great royal house, splendid and full of light both within and without." In doing so, he created on the Earth a conceptual image (i.e., an icon) "of those things which lie above the vault of heaven."[29] The human metaphor conjures, if falsely from Eusebios's point of view, visual parallels with ancient Greek temples in which human figures depicted literally functioned as structural elements, such as the Porch of the Maidens on the Erechtheion in Athens or the huge temple of Zeus at Agrigento. For Eusebios, however, the human figure had a very different meaning. His reference pointed to the spiritual strength contained within the human soul and the collective power of a society ideologically united in the new faith. Despite the seemingly irreconcilable notions of human figure as reality and metaphor in its relationship to architecture as just described, Christianity did find ways of appropriating visual ideas from the pagan world and adapting them to its own aesthetic purposes.

In late antiquity, as is well known, the human figure often appeared in an architectural context, especially on column capitals associated with the Composite order; renderings ranged from faces and masks to full figures. In its widespread popularity, this type of ornamentation ultimately displayed surprising, almost seamless, continuity from pagan into Christian practice. For example, a pilaster capital excavated at Antioch, datable to approximately A.D. 300, could have come from either a pagan or a Christian building (fig. 3).[30] The main mechanisms at work in this context appear to have been facilitated by imperial patronage, which often played a major conciliatory role in matters concerning cultural links between seemingly irreconcilable adversaries.

Nor were column capitals the exclusive architectural loci for the placement of human figures. Once again, Eusebios provides invaluable insights through his description of the no-longer-extant imperial palace gate in Constantinople: on this structure, Constantine the Great had placed a painted (apparently encaustic) portrait of himself in the company of his sons.[31] The symbol of victory (the cross or the monogram of Christ) was displayed above his head while his feet were shown trampling a dragon, the all-embracing symbol of evil. The appearance of imperial figures on triumphal arches, a type exemplified by the imperial palace gate itself, belonged to an age-old Roman imperial practice. But different and new here was that the composition was rendered as a painting. In addition, it celebrated not a specific event, but alluded to Constantine's embracing of Christianity as the new official religion of the Roman Empire. A silver pin depicting the façade of a Late Roman city gate (comparable to the well-known Porta Nigra at Trier) includes an axially displayed frontal male head wearing the so-called radiant crown (fig. 4).[32] The character of the architecture, together with the iconographic and stylistic traits of the head, suggests that the piece was probably produced around the turn of the fourth century. The head could represent Helios, whose cult enjoyed a high level of popularity at the time. Alternatively, it could also have depicted Constantine, who is known to have followed several predecessors on the imperial throne who were characteristically shown wearing the radiant crown. The extensive number of different coin types minted during Constantine's relatively long

Figure 3. Pilaster capital with mask, from Antioch-on-the-Orontes, Syria, ca. A.D. 300. Marble; h. 25.8 cm., w. 22.5 cm., d. 4.5 cm.; abacus 4.8 x 34.5 cm. Princeton University Art Museum, gift of the American Committee for the Excavation of Antioch (2004-203).

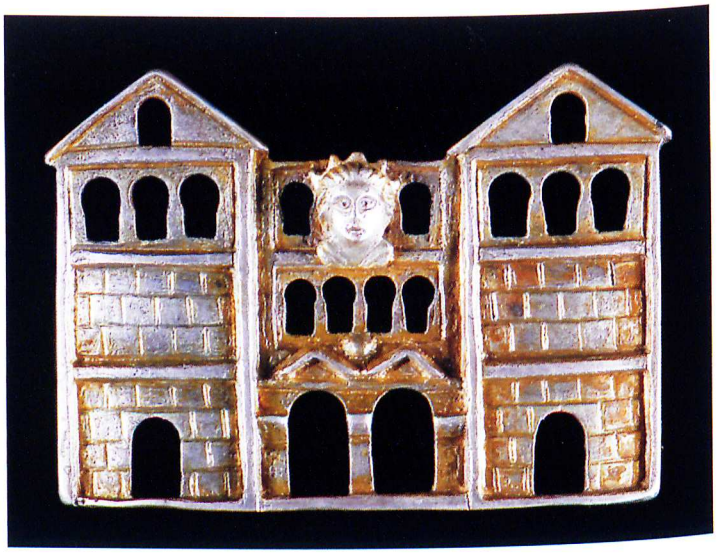


Figure 4. Pin in the form of a city gate, ca. A.D. 300. Gilded silver; 3.6 x 5.1 cm. Whereabouts unknown, formerly in the German art market.

Figure 5. Gold coin with Constantine I wearing the radiant crown (obverse) and Helios (reverse). Minted in Siscia (Latin) / Sisak (Croatian), Croatia. Belgrade City Museum.

reign includes a gold coin depicting Constantine wearing the radiant crown on the obverse and the full figure of Helios on the reverse (fig. 5).

Constantine's personal association with Helios had a monumental public manifestation in Constantinople, his new capital city. The celebrated porphyry honorific column that Constantine erected in the forum bearing his name is still standing, albeit disfigured by vicissitudes of history. Now known as the Burnt Column, it originally stood in the center of an oval forum topped by a statue of Constantine, evidently depicted in the guise of Helios.[33]

The column of Constantine in Constantinople, though made in the long tradition of Roman honorific columns, among which the best-known are those of the emperors Trajan and Marcus Aurelius in Rome, also marked significant changes in that tradition. The appearance of Constantine in the guise of the pagan sun god was one of those changes; another was the incorporation of a Christian chapel at the column's base. Stressing the emperor as a "source of light" and including a Christian venue for worship muted the perception of this monument as an outright continuation of the pagan idol-worshipping tradition in the eyes of Christian critics. The developing Christian tradition of victory imagery through direct imperial input was also facilitated by appropriation of the concept of pagan honorific columns for monuments celebrating Christian triumph. Thus, in the course of the fifth century, as the custom of mounting statues of emperors atop honorific columns gradually ceased, it was superseded by a new custom of placing the cross in their stead—as the paramount symbol of Christian victory.[34]

During the very same time span, another significant and related form demonstrating Christian triumph began in Syria with the appearance of the first stylite—Saint Simeon the Elder (ca. 389–459), whose ascetic feat of standing atop a tall column for

over thirty years set a new standard of asceticism that gained particular popularity in Syria.[35] The stylites' cult exerted a major impact not only in the places of their feats, but also throughout the Eastern Christian world because of the general perception that they were the preeminent followers of Christ. This new dimension of Christian religious practice spurred important developments in the context of Eastern Christian art. Objects ranging in size from pilgrimage tokens imprinted with images of the stylites, to metal reliquaries (*kivoria*) for keeping the relics of a given saint, to idiosyncratic icons, to integral parts of church interior mural programs survive in relatively large numbers. A sixth-century(?) hammered silver plaque, now in the Musée du Louvre in Paris, is one of the oldest known, and one that combines the representation of Saint Simeon Stylites the Elder on top of his column with a giant serpent wrapped around the column challenging the saint (fig. 6).[36] Clearly, this is a symbolic representation in which the saint is depicted in an iconic, frontal pose, lacking the lower body, thus placing emphasis on his supreme spirituality, achieved through systematic denial of his physical nature and conquering all evil temptations, signified by the giant serpent. The serpent wrapped around the column formally recalls storiated honorific columns in which victories of the honorees were recounted in relief images on a spiral band "wrapped" around columns. The giant serpent wrapped around Saint Simeon's column, therefore, could refer to the continuous long string of the saint's victories over evil won during the time spent on his column. The product of a new aesthetic, this is an icon par excellence. In it, the human body appears fused with an architectural element into a symbol with little (if any) visual "representational" value. The representational denials, one might say, are deliberate, no less than the physical denials by the saint, whose spiritual feats were the primary purpose of this "representation."

Figure 6. Reliquary plaque with image of Saint Simeon Stylites, Syrian, late 6th–early 7th centuries. Gilded silver; 30 x 26 cm. Musée du Louvre, Paris (Bj 2180).

One of the more significant aspects of representation of architecture in Byzantine art, and directly related to its aesthetic perception as being predominantly, if not exclusively, of spiritual value, is the denial of the relevance of physical scale. More often than not, buildings, especially churches, are depicted in all art media as being of the same size or even smaller than human beings. Since churches, symbolically speaking, were understood as houses of God, this seeming paradox becomes perfectly clear. Given that Christ was a "body image" used by God to make himself visible to mankind, a physical man-made object, no matter how big

Figure 7. Interior view of the apse of the *katholikon* of Hosios Loukas Monastery, early 11th century(?). Phokis, Greece.

or small, could—symbolically speaking—also "contain" the uncontainable God. When dealing with symbols of any kind, scale, as a method of relating the size of objects, completely loses its meaning. The most significant other human parallel is that of the Virgin Mary, known to the Byzantines as the Theotokos (God-bearer), also referred to as "the container of the uncontainable" (η χώρα του αχώριτου). Thus, the Virgin is metaphorically equated with the church building and her womb with the sanctuary, the part of the church inaccessible to all except the priest.[37] It is no accident, therefore, that within mural pictorial programs that cover later Byzantine church interiors, it is the image of the Virgin with the Christ child that most commonly occupies the conch of the sanctuary apse, as, for example, in the *katholikon* of Hosios Loukas (fig. 7). Thus, yet another aspect of the role of the human body as a container of the infinite divine grace is related to architecture, its physical limitations notwithstanding.

There are a number of other contexts where images of buildings figure prominently, but their scale may at first seem perplexing, at least to modern eyes. Perhaps one of the most revealing categories is portraiture of patrons holding church representations in their hands. The question of what such a depiction of a building could possibly represent has been a subject of debate.[38] One of the well-known examples of such portraits with a church model in hand is that of Emperor Justinian I (ruled 527–565), depicted in his role as patron of the Church of Hagia Sophia in Constantinople (fig. 8).[39] The tenth-century mosaic is part of a larger scene located above the southern entrance door leading into the church narthex (see the essay by H. G. Saradi in this volume, fig. 11). In this case, there can be no doubt that the representation was made from the actual building, as it postdates completion of the original construction by four centuries. The Great Church is depicted in an abridged manner. It is shown dominated by an enormous dome, proportionally half the size of the entire building, its main body represented merely by one of the great lateral arches flanked by two massive buttresses. As large as the dome of Hagia Sophia is in reality, proportionally speaking, it is much smaller than the actual building. The same can be said for the nimbed cross depicted atop the dome that, as large as it must have been, could not possibly have been as huge as the one depicted in the mosaic image. While the general features of the building are recognizable, they are not rendered with any degree of accuracy compared to what realistic standards would have mandated. Realism, however, was obviously not the artist's intention in the depiction of the church any more than in the

rendering of the facial features or the crown worn by the emperor, whose portrait here reveals no resemblance to any other known portrait of Justinian I. Similarly modified renderings of the Great Church appear in various other media. Representations on a series of special patriarchal seals—known as εκκλησιέκδικοι—depict the church held by the Virgin and the emperor Justinian (cat. no. 19).[40] Used as seals on special legal documents issued to select accused individuals who were granted asylum within the Great Church, these images point to yet another sacred role of the church as the house of God in the Byzantine world.

Figure 8. Model of Hagia Sophia in the hands of Justinian, 10th century. Detail of the inner narthex mosaic showing Justinian and Constantine offering the church and the city to the Theotokos and her son. Hagia Sophia, Istanbul.

Three-dimensional model-like objects associated with church architecture abound, as can be seen elsewhere in this volume (e.g., cat. nos. 2–7, 56, 57).They differ significantly in size and functional intent, as well as in materials used for their making, but what they do have in common—their three-dimensionality—deserves special attention. Three-dimensionality, it must be underscored, was relatively uncommon in Byzantine art. Three-dimensional figurative sculpture, for example, practically disappeared after about 550. Initially, this trend was driven by the need to distance Christianity from pagan idols, most commonly perceived as three-dimensional statuary. More relevant, it would seem, was the enduring understanding that in Byzantine art, sacred images did not represent the substance of persons they depicted, but only their likeness.[41] The lack of substance also meant that these individuals could not be depicted in space. Icon beholders were not privileged to walk around a sacred image. What lay spatially behind such an image was inaccessible to them; it was the sacred domain that could be accessed only spiritually. It is clear, however, from their occasional rendering of the three-dimensional model-like objects that Byzantine artists knew three-dimensionality, but it is also clear that three-dimensionality had limited applicability in their own work.

The three-dimensional objects depicting church buildings constitute a singular category. As symbolic containers of the sacred, they seem to have been endowed with three-dimensional properties as a particular form of distinction. It would appear that three-dimensionality, unlike physical scale, may have been perceived as a divine property that, in a limited sense, could be revealed to humans. Although, to my knowledge, this concept is not explicitly formulated in any text, certain visual clues point in that direction. Among these, the Armenian Church of the Holy Cross at Aghtamar, on Lake Van in eastern Turkey, provides a particularly striking example. Built in 915–921 by King Gagik Artsruni (908–936), this remarkable church was the work of architect and sculptor Manuel.[42] An elaborate figurative sculptural program displayed on all of its four façades is one of the many distinctive qualities of this royal foundation. All the

sculpture—except for one element—is executed in low relief. The startling exception is the representation of the church, as depicted in the hands of King Gagik on the north half of the west façade, flanking the central window (fig. 9).[43] The king is shown offering the church to Christ, whose figure appears on the opposite (south) side of the central window. There is nothing unusual about the iconography of the gift-bearing king presenting the heavenly ruler with his gift. What is striking is that both the king and Christ are depicted frontally, in low relief, very much in an icon-like mode. The flatness of this composition is strikingly broken by the projecting mass of the church model. Clearly, this gives the gift desired visibility; but would this criterion alone have warranted such an unusual approach to the subject matter? Given the present state of knowledge, there is no absolute answer to this question; nonetheless, the desire to emphasize the church as God's symbolic dwelling may be a plausible explanation.

The same reasoning may also be behind the widespread use of similar church models that appear in relatively large numbers in medieval Armenia, Georgia, and the eastern Byzantine Empire,[44] and also behind the extensive use of metal liturgical objects—*artophoria*, censers, reliquaries, and processional cross bases—made in the form of churches, whose symbolic role may have readily facilitated their three-dimensional articulation.

An interesting folk tradition, about which scant information survives, provides additional clues as to how these three-dimensional church models may have been perceived and how they may have functioned. A nineteenth-century traveler observed that during the second half of the century, small hand-made, solid wood models of the fourteenth-century church of Gračanica Monastery were produced locally by the

Figure 9. Church model in the hands of King Gagik Artsruni, 915–921. Detail of west façade sculpture. Church of the Holy Cross, Aghtamar, Turkey.

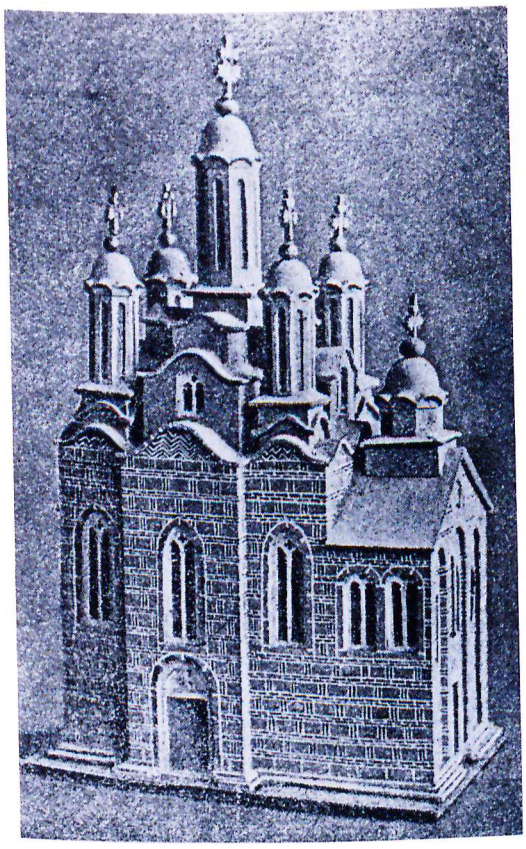


Figure 10. Model of Gračanica Monastery, 19th century. Wood. Original lost; only the photograph published by Spiridion Gopčević survives.

Figure 11. Reliquary, work of Master Dimitrije from Lipova, made for Šišatovac Monastery in 1550/1. Gilded silver; h. 36.5 cm., l. 20 cm., w. 8 cm. Museum of the Serbian Orthodox Church, Belgrade.

Serbian population for purposes of veneration at a time when the church itself was abandoned and kept closed by the Ottoman authorities (fig. 10).[45] According to the author of the account, such miniature models were secretly carried by Serbian peasants to their fields where, during breaks from work, they would set them up on mats and, using them as visual foci, engage in private prayers.[46] The use of such small wooden models clearly indicates that they functioned in the same way as portable icons. In fact, their function, symbolically speaking, did not differ from that of a real church though, obviously, a person could never enter them physically. It was the spiritual entrance that actually mattered, and it was for that very reason that such model-symbols were produced. A comparison with the actual church building reveals considerable differences between the two, in details as well as in general form.[47] For unknown reasons, the nineteenth-century artisan responsible for making the model took liberties in his visual interpretation of the building, exaggerating its proportions and attenuating its domes. In so doing, he nevertheless adhered to a much older Byzantine aesthetic principle in accordance with which the object, being preeminently a symbol, had a spiritual role whose effectiveness was in no way compromised.

CHURCH ARCHITECTURE AS METAPHOR

As just described, the appearance of Gračanica's wooden model departs considerably from its real architectural prototype. Preference for such elongated proportions are detectable among a number of sixteenth- and seventeenth-century metal reliquaries,

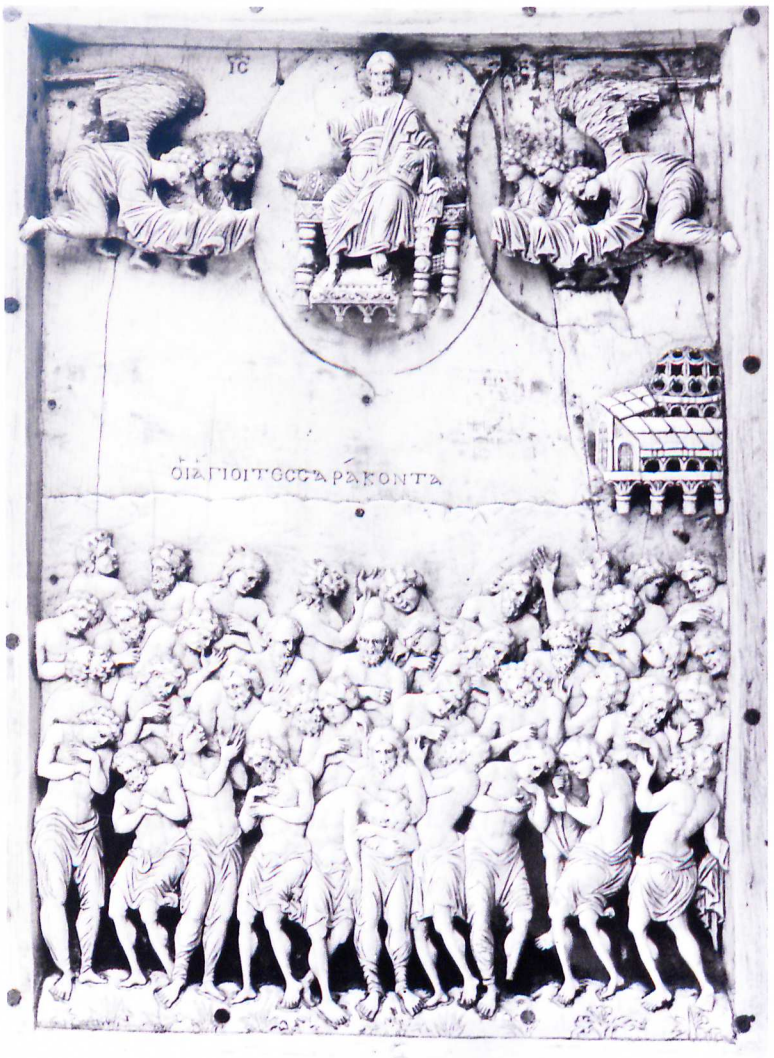


Figure 12. Forty Martyrs of Sebaste, 11th century. Ivory; 17.5 x 12.8 cm. Museum für spätantike und byzantinische Kunst, Berlin (574).

among which the so-called Lipova reliquary from Šišatovac Monastery, now in the Museum of the Serbian Orthodox Church in Belgrade, is especially striking (fig. 11).[48] This vessel in the form of a church, intended for keeping a saint's relics, was made in 1550. Despite its extraordinarily elongated proportions, its general architectural form evokes Late Byzantine five-domed churches. Unlike the wooden model of Gračanica, whose exterior was painted to emulate the actual construction technique, the main façades of the Lipova reliquary are covered with small panels depicting busts of individual saints, each panel resembling an icon. The emphasis on the presence of saints intensifies the reading of this object as a heavenly abode. Other comparable objects in this exhibition reveal the popularity of this approach (e.g., cat. nos. 56 and 57). Through the emphasis on human figures as integral elements of its walls, the physicality of architecture was essentially negated. The object, in other words, has been dematerialized by the transformation of its exterior into a cage of icon-like panels that highlight its spiritual content and recall the concept of the church as a human metaphor, articulated, as already noted, in the fourth century by Eusebios of Caesarea.

Eusebios's metaphorical vision of a church—Christ building a "living temple" in which the walls and columns were made of "living and moving stones" (people), suitable for making a royal palace filled with brilliance and light, internally and externally—has many unrecognized visual manifestations in Byzantine art. Several Middle Byzantine depictions of the Forty Martyrs of Sebaste, for example, stand out as visual metaphors of the church, made of "hard and strong spiritual stones." An eleventh-century ivory now in Berlin represents a paradigmatic rendition of the Forty Martyrs, shown seminude, organized in four rows, standing in the freezing waters of Lake Sebaste (fig. 12).[49] While they are shown as twisting and bending in their physical agony, the icon actually illustrates their unbending spiritual strength based on their firm faith. It is that invisible aspect that makes them the "living and moving stones" comprising the walls of Christ's church. At the same time, the visible architecture of a small bath, the escape haven of a single traitor within the original group of Forty, here becomes a symbol of earthly corruptibility in contrast to the invisible perfection of Christ's church. Compositional analysis takes the discussion one step further. The four rows, each consisting of ten of the forty martyrs, may be understood as the four walls of the church. Symmetrically disposed, at the top of the very center of the composition, is the image of the enthroned Christ surrounded by two groups of venerating angels.

Figure 13. Dome and central crossing of the Church of Santa Maria dell'Ammiraglio, known as "La Martorana," 1143–51. Palermo, Italy,

The scheme clearly alludes to the Pantokrator image, commonly depicted in Middle Byzantine church domes as, for example, in the case of the twelfth-century church of Santa Maria dell'Ammiraglio (Saint Mary of the Admiral), known as "La Martorana," in Palermo, where the Pantokrator is shown similarly enthroned, surrounded by venerating angels and hovering above the standing figures of saints, as on the Forty Martyrs ivory (fig. 13).[50]

The compositional arrangement of the Forty Martyrs ivory may be compared to another eleventh-century work of art, a page from the so-called Sviatoslav Codex (fig. 14).[51] This full-page illumination depicts the frontally standing church fathers in several rows, only the front row in full view, while the heads of those in at least two additional rows behind them are only partially visible. The church fathers are shown under an arch, itself part of an elaborate two-dimensional frame. While this is not a representation of a building, there can be no doubt that the frame, though devoid of all but compositional associations, alludes to a five-domed Byzantine church. Once more, the bodies of the church fathers, as in the Forty Martyrs ivory, may be metaphorically understood as "the real stones" of the church. In this case, it should be noted, the two-dimensional frame provides the clue for the metaphorical reading of the image as a whole.

Figure 14. Illustration for the Sviatoslav Codex (Izbornik Sviatoslava Kievan Rus), 1073. GIM, Sin.1043 (Sin.31-d), fol. 3v. State Historical Museum, Moscow.

Other examples of the incorporation of the Forty Martyrs into church architecture reinforce the proposed interpretation of the Berlin ivory. Writing about a curious Old Church Slavonic inscription on a stone block discovered in 1900 in the village of Gornji Katun (near Temnić, in central Serbia), Svetozar Radojčić recognized the names of ten of the Forty Martyrs and their invocation to God.[52] Radojčić dated the block to the tenth or eleventh century and identified it as one of the keystones of the four arches that once held up the dome of a long-since-destroyed church for which this and the other three (now lost) stone blocks must have been made. To substantiate his argument concerning the placement and the prophylactic function of the names or representations of the Forty Martyrs of Sebaste, Radojčić referred to their comparable figurative uses in the Churches of Saint Sophia in Kiev (11th century) and Nereditsa (12th century) in Russia; the Oratory of Saint Lucia, in Syracuse, Sicily (12th century); the Churches

of the Archangel Gabriel at Lesnovo and the Mother of God at Matejće (both 14th century) in the Former Yugoslav Republic of Macedonia; and in the Church of the Trinity at Pljevlje (1592) in Montenegro.[53] Such a wide chronological and geographical spread of representations of the Forty Martyrs led Radojčić to conclude that the keystone-arch inscription from Gornji Katun was one of the most striking examples of such prophylactic arrangements within church buildings incorporated with the idea of protecting the respective buildings from natural disasters, especially earthquakes.[54]

An observation regarding the Church of Hagia Sophia in Constantinople, built under the auspices of Justinian I (527–65), could also be brought into the context of this discussion. While almost nothing is known about the appearance of the first dome (which collapsed in 558) except that it was twenty feet lower than the second (which was rebuilt by 563), the second dome is substantially preserved in the present building. One of the remarkable characteristics of the second dome is that it rests on forty massive brick ribs connected by forty small arches at the very base of the dome. The forty arches, in turn, frame forty windows that illuminate the base of the dome in a striking manner (see essay by H. G. Saradi in this volume, fig. 23).[55] The exterior of each of the forty ribs is externally buttressed by an additional wall mass. Forty external arches form hoods above the forty windows, visually linking the forty wall buttresses; together they form a pseudo-drum at the base of the hemispherical dome. While there can be no doubt that this solution was structurally informed, the symbolism of the number forty would not have escaped the attention of contemporaries.[56]

A legend associating the Forty Martyrs with the ninth-century rebuilding of the damaged dome of the Church of the Ascension in Jerusalem is also of particular relevance in this context.[57] According to the legend, after the dome of the church was damaged, the Patriarch of Jerusalem, Thomas (807–820), had a dream in which he saw the Forty Martyrs holding up the damaged dome. He promptly instructed the builders responsible for the reconstruction of the church to incorporate forty wooden beams into the base of the dome. How all of this may have looked and functioned is impossible to know, but the association of the Forty Martyrs in the matter, as well as the use of the number forty in the actual implementation of the reconstruction—even if merely a legend—is of considerable relevance.

DEMATERIALIZATION AS SPIRITUALIZATION

Byzantine architecture during and after the reign of Justinian underwent a significant shift to vaulted (not only domed) church architecture. Using the modular qualities of bays, Byzantine builders pioneered, it would seem, design principles that reached their highest level of perfection in Gothic architecture several centuries later. These involve, above all, dematerialization of walls, and admission of large quantities of natural light into the church interior with comparable symbolic intent. The effects of dematerialization in Byzantine art were most obvious in three-dimensional contexts, particularly in architecture and its representations. Three-dimensionality, on the other hand, stood out in its own right, for generally it was avoided in Byzantine art. Thus, its occasional appearance seems to have been the result of a deliberate, selective act, revealing it as an exclusive prerogative symbolically alluding to God's own realm.

Figure 15. Byzantine column capital, Constantinople, 6th century. Marble. Garden of the Archaeological Museum, Istanbul.

Figure 16. Censer, from Laodicea, Syria, 6th century. Bronze; h. 18.1 cm., w. 8.3 cm. Dumbarton Oaks, Washington, D.C. (50.31).

Dematerialization became one of the key methods employed by Eastern Christian artists and artisans working with all the then-known materials and in all media with the aim of denying the physicality of form, especially with regard to buildings. This aesthetic goal was part of the greater theological framework upon which the aesthetic principles of Byzantine architecture and art rested. Sixth-century churches, in particular, were marked by these dematerializing tendencies. Their walls perforated by multiple large windows, their architectural sculptural elements deeply "undercut" by a sophisticated carving technique (fig. 15), their interior walls sheathed in multicolored stone revetments, and their vaults covered with glimmering mosaics collectively resulted in highly diaphanous effects. Opening up the walls, as noted above, was directly linked with the abundant introduction of physical light into the building, whose symbolic association with divine light was of particular significance. The same aesthetic principles affected other objects of religious and also secular character. Perforation of surfaces, as a technique, was also employed in objects such as lighting devices and incense-burning censers. Fine examples in the latter category are a sixth-century hexagonal censer with a domed roof, from Laodicea (modern Latakya, Syria), now in the collection of Dumbarton Oaks (Washington, D.C.) (fig. 16), and a square one with a pyramidal roof, now in a private collection in Berlin (cat. no. 53).[58] By virtue of their overall forms, both recall Late Antique mausolea. Their perforated geometric surfaces underscore the preference for the dematerialization of physical matter, thus transforming the form into a symbol. Artificial light and aromatic smoke, associated with the use of such objects, further intensified their spiritual meaning, underscoring the irrelevance of their physicality through the reduction of both physical scale and mass.[59]

Yet another idiosyncratic category of Byzantine art objects—bronze cross bases—deserves notice in this context (cat. nos. 43–48). Mostly products of the eleventh and twelfth centuries, cross bases of this type had the form of a small church or a tower-

cum-church model. An oversized bronze cross topped a dome while a tapered cylindrical base below the church model facilitated the mounting of the object on a wooden pole to be carried in special religious processions (fig. 17).[60] These crosses symbolized the triumph of Christianity by invoking in symbolic, but also in formal, terms Late Antique monumental crosses mounted on honorific columns in urban settings.[61] A closer inspection of a cross base of this type reveals a model of a cruciform church with a projecting apse on one side and a dome elevated upon a highly attenuated drum over the crossing (fig. 18). Below the church are two additional levels, suggesting a multistoried building, possibly a monastic tower. Each level has walls perforated by large openings, mostly windows of a very characteristic shape, referred to in modern literature as "keyhole" windows.[62] The number and the relative size of these openings are responsible for the pronounced dematerializing effect on the building represented. Thus, the symbolic visual language strongly supported the strictly spiritual content.

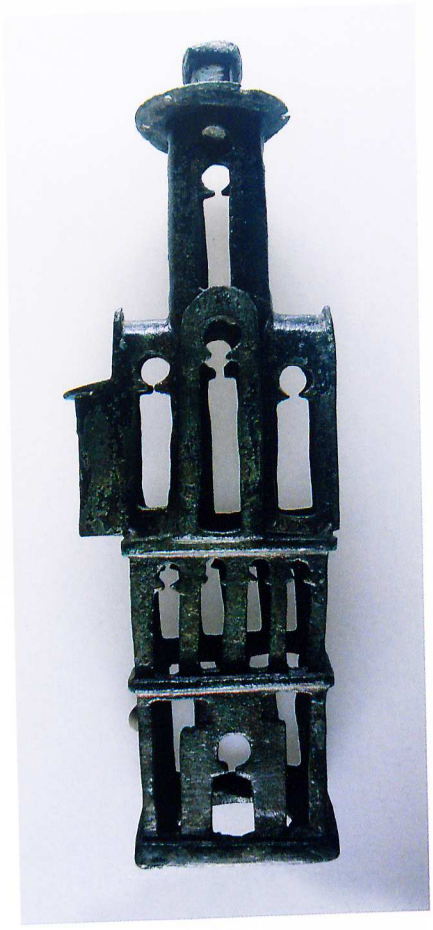


Figure 17. Cross base with cross, from Constantinople or Asia Minor (?), 11th–12th centuries. Bronze, cast, filed, reamed, and scraped, with turquoise glass beads; h. 44.5 cm., w. 12.5 cm. Private collection.

Figure 18. Cross base, 11th–12th centuries. Bronze. Sammlung Christian Schmidt, Munich.

SPACE AS SYMBOL

In the representation of the architectural form in space, qualities of dependence on, but also distancing from, Classical prototypes become evident. Since this vast topic is the subject of Professor Saradi's essay in this volume, my task here will be limited to observations pertaining to the perception of buildings as icons, as containers of the uncontainable, and as symbols of divine presence among humans.

The teachings of Pseudo-Dionysios make a fundamental distinction between "the beautiful" (το καλόν) and "absolute beauty" (το κάλλος). Humans can attain the beautiful, but absolute beauty is divine. Humans, accordingly, could (and should) aspire to absolute beauty, but it would always remain beyond their physical senses, accessible only through the perfection of the spirit, and at that, only to the limited few. In this context, a parallel may be drawn between these teachings and the concept of the church building as a form in relation to its interior space: the former, created as a container of the divine spirit, could be visually perceived as beautiful; its content, its absolute beauty, by contrast, could be comprehended but only spiritually. Sixth-century writers of Byzantine *ekphraseis* (e.g., Prokopios, Paul the Silentiary, and others) verbalized notions of incomprehensibility and absolute beauty in a manner intimately related to art and architecture they were describing.[63] Prokopios, describing the interior of Hagia Sophia in Constantinople at the time of its first dedication in 537, refers to its great dome that "seems not to rest upon solid masonry, but to

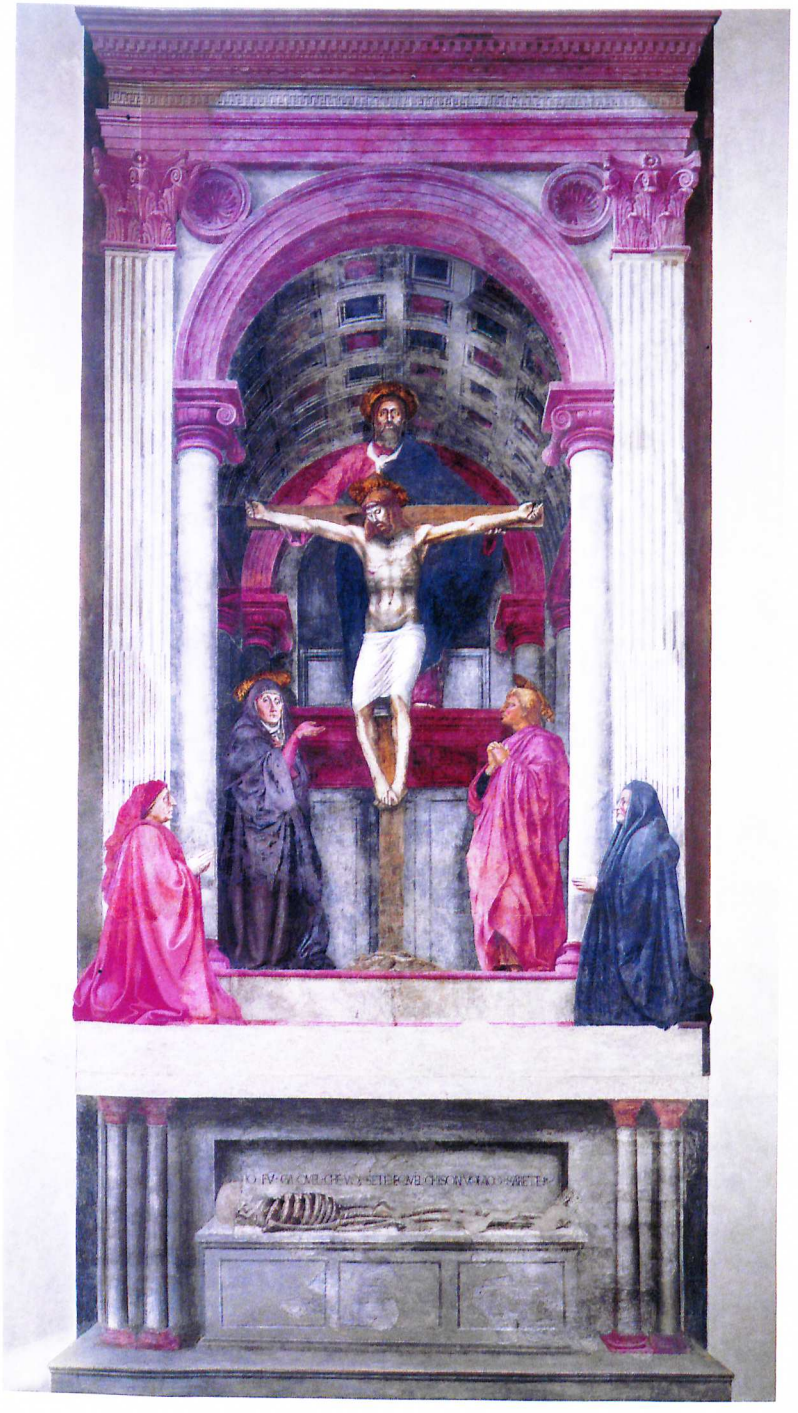


Figure 19. Masaccio, 1401–1428. *Trinity* fresco, ca. 1425. Santa Maria Novella, Florence.

cover the space with its golden *sphaira* (hemisphere) suspended from Heaven."[64] Thus, the "miraculously" covered interior is the product of "details, fitted together with incredible skill" that, seen together, "produce a single and most extraordinary harmony in the work, and yet do not permit the spectator to linger much over the study of any of them." As a consequence, "the vision constantly shifts suddenly, for the beholder is utterly unable to select which particular detail he should admire . . . though they turn attention to every side . . . still unable to understand . . . they always depart from there overwhelmed by the bewildering sight."[65] Prokopios, clearly, uses language that describes the incomprehensibility or "absolute beauty" of God's abode. Man-made architecture, despite its material presence, has been transformed into a symbol.[66] The general attitude toward issues pertaining to the understanding of interior space in Byzantine churches did not change significantly with the passage of time.[67] It must be stressed in this context that Byzantine artists seldom, if ever, attempted to represent the interior space of buildings. Interiors are only alluded to by a person shown seated or involved in some form of activity that is known to be taking place within an interior environment. The idea of framing, that is, containing space, it would seem, was theologically unacceptable as a subject of either pictorial or literary representations in Byzantium.[68] Ultimately, it would appear that for the Byzantines, space was infinite, and therefore, uncontainable and not subject to representation. This, however, constitutes a complex topic in its own right that can be addressed here only briefly by contrasting Western Renaissance and Byzantine approaches to pictorial renderings of space within a comparable religious context.

Two works with identical subject matter and similar compositional structures will serve as cases in point: the famous Trinity (actually depicting the Crucifixion) fresco painted in 1426–27 by Masaccio in the Cathedral of Florence and a roughly contemporary but virtually unknown fifteenth-century Russian Crucifixion icon, now in the Louvre in Paris (figs. 19 and 20). The two representations could not be more different. Visually speaking, the main differences concern the manner of rendering space. Masaccio treats the Crucifixion as an event that takes place within an interior vaulted space, which is shown in one-point perspective. The space *frames* and *contains* the main

event witnessed by the standing figures of the Virgin Mary and Saint John. Outside the main space but slightly below are the donors, a man and his wife, kneeling in prayer, essentially eye-witnesses of the main event. The floor on which the donors kneel is depicted on the eye level of the actual living perceiver standing on the real floor of the cathedral. Because of the illusionistic pictorial effect of the one-point perspective, the ideal way for this painting to be viewed is if the perceiver stands directly in front of it, and in the center of the painting. Thus, he or she also becomes an eyewitness of the event, his or her eyes aligned directly with the tip of a rock with a human skull, symbolizing Golgotha and Adam's tomb at the base of the cross. To make matters even more startling, the figure of God the Father, looming high above the cross, is depicted as though holding up the Crucifix with his outstretched hands. It is of interest that his figure is the only one within the space contained by the semicylindrical vault symbolizing the heavenly sphere, while the Crucifix, the Virgin, and Saint John all appear to be within the cubical space below the vault, alluding to the earthly sphere.[69]

Figure 20. Icon with the Crucifixion, Russian, School of Novgorod, 17th century. Oil on wood; 71 x 57 cm. Musée du Louvre, Paris (RF1972-48).

The Crucifixion icon from the Louvre displays a very different approach to the rendition of space. Here the event is set outdoors, and it seems to display historical accuracy by placing Golgotha with the cross bearing the crucified Christ just outside the city walls of Jerusalem. While this could be a plausible way of reading what is depicted, one must note that the wall is shown without any indication of buildings behind it, as was the standard approach to depicting cities in Byzantine art. Taking this into account, it seems more plausible that the wall itself alludes not to the earthly, but the heavenly Jerusalem, against which the Crucifixion is symbolically rendered. Thus, in contrast to the literal depiction of God the Father in the heavenly sphere rendered as a semicylindrical vault, the Byzantine artist delivers a comparable message without attempting to portray actual space. The wall in the Byzantine icon, in some sense, has the same function as the imaginary horizontal plane that divides the vaulted compartment from the cubical room in Masaccio's fresco; it, too, separates the earthly from the heavenly realms, but does so symbolically rather than pictorially. The symbolically rendered infinite space in the Russian icon provided access to the heavenly realm only to those capable of spiritual seeing, while Masaccio's literal approach not only demonstrates the intent to capture and represent the event in real time and space, but does so by

involving every spectator. This, of course, was a new approach to art in which "realism" assumed a new order of meaning. By contrast, the Byzantine approach, as has been repeatedly demonstrated, relied on symbolic implications of timelessness and spatial infinity as hallmarks of the divine, therefore uncontainable, visually inaccessible eternal presence of God.

The articulated problem of the Byzantine perception of space brings us to a fundamental question: if the interior space of a church was characterized by the desire to communicate infinity and incomprehensibility, how then did it function liturgically? If we accept Otto Demus's reading of the Middle Byzantine "Classical System of Church Decoration" as having "a majestic singleness of purpose" in representing "the central formula of Byzantine theology (e.g., fig. 13), the Christological dogma, together with its implications in the organization and the ritual of the Byzantine Church," how are we to imagine the behavior of the congregation, their visual attention "constantly shifting" and their being "overwhelmed and bewildered," according to Prokopios, by the multitude of pictorial representations on the church walls and vaults?[70] This heavenly environment that enveloped the faithful was never actually meant to be comprehensible in a literal sense, nor was it meant to function as the liturgical focus of the church. It was a symbolic summa of the Christian universe as a reflection of the invisible, uncontainable God.

ICONOSTASIS—SPACE MADE TWO-DIMENSIONAL

On a practical level, the attention of the congregation participating in a liturgical service was directed to the east and focused on relatively few images and objects of special relevance in that context. From the very beginnings of church architecture, the area with the altar table was set aside as the Holy of Holies. Initially separated by a low chancel screen, by the fifth century this grew into a columnar screen, referred to as a *templon*. It is still debated how and when the intercolumniations of such a screen began to be closed. Generally, it is thought that initially curtains may have hung between columns, and that they could, at given moments, be opened, exposing the sanctuary area to full view of the assembly of the faithful. By the Middle Byzantine period, possibly as early as the ninth century, the *templon* began to be closed by icons—depicting Christ, the Mother of God, and other saints—thus rendering the interior of the sanctuary completely invisible to the congregation (fig. 21). This trend continued in the later centuries with the enclosing sanctuary screen, now referred to as the *iconostasis*, rising first by the addition of one, and later by two or more, tiers covered by individual icons.[71] The iconostasis thus became a veritable façade, recalling Late Antique city gates (see fig. 4) and sharing with them no insignificant amount of symbolic meaning. By the fifteenth and sixteenth centuries, in church architecture, especially in Russia, these became monumental multitiered screens of great height, nearly touching the vaults of highly attenuated interior spaces. Starting initially with the function of accommodating two or four icons, later iconostasis screens held multitudes of icons, including the Christological cycle with twelve or more scenes from the Life and Passion of Jesus Christ, the Deësis with the Twelve Apostles, as well as other saints. These giant grids

Figure 21. Interior view of the sanctuary of the *katholikon* of Hosios Loukas Monastery, 11th century. Phokis, Greece.

with their multiple individual panels recalled interior church walls covered by similar, multiple tiers of frescoes, individually separated by dark red bands that form giant pictorial matrices. While painted church interiors continued to fulfill their established function of symbolizing the Christian universe, the iconostasis may be said to have increasingly assumed the symbolic role of the church building itself (fig. 22). It became, we might say, the unfolded church interior, its four walls flattened out and made two-dimensional as a single giant screen comprised of individual icons. Looking at the iconostasis, then, the faithful face not a single icon of a saint, as one would in a typical private prayer setting, but an iconographic display not unlike that found on the interior walls and vaults of church buildings, with all of its implications. The iconostasis, thus, became the most comprehensive paradigmatic manifestation of architecture as icon.

Figure 22. Icon of the Iconostasis of the Church of the Dormition of the Mother of God, the Kremlin, Moscow, early 19th century. Tempera on wood; 35.5 x 30.5 cm. State Tretyakov Gallery Moscow (24415).

The seventeenth-century Icon of the Iconostasis from the Church of the Dormition in the Moscow Kremlin is the most eloquent illustration of the phenomenon in several respects. On the one hand, it illustrates the equation between a single icon and the multitude of icons assembled on an iconostasis. On the other hand, the manner in which the iconostasis is depicted unmistakably relates it to the architecture of the church with which it is associated. At the top of the image are displayed five bulbous church domes on tall drums, characteristic of the Church of the Dormition. The linear alignment of domes depicted side by side suggests that this not is merely a frontal view of the iconstasis, but a two dimensional view of the church itself, as though its walls had been opened up like panels of a polyptych (cat. no. 58).

Like an icon, at once visible and revealing in physical terms, the iconostasis was also concealing, making God's heavenly realm spiritually visible but only to those

who are truly enlightened spiritually. The iconostasis has been called "the boundary between the visible and invisible worlds," as well as "a manifest appearance of heavenly witnesses . . . who proclaim that which is from the other side of the mortal flesh. *Iconostasis is the saints themselves.*"[72] Accordingly, the iconostasis is the "living wall" made up of "living stones" (saints).[73] Several so-called Menologion icons from the Monastery of Saint Catherine on Mount Sinai can be invoked as allusions to this concept. Illustrating the church calendar, these icons depict single saints or groups of saints, organized in multiple tiers, illustrating each day of the calendar year (fig. 23). Their rigid frontality and regimented organization imbue these icons with an undeniable architectonic demeanor that unmistakably echoes the notion of the 'living wall' as related to the iconostasis. The changing historical role of the iconostasis reveals the continuing theological efforts to define means whereby the boundary between the earthly and heavenly realms could be most effectively defined. Whereas the space of the church interior continued to be perceived as the symbolic container of the uncontainable, the iconostasis became the ultimate manifestation of architecture as icon—its great boundary wall covered with a veritable summa of all icons. The iconostasis at once provided the faithful with full spiritual access to the absolute beauty of the heavenly realm, while the beauty of the imagery of saints depicted on its façade emphatically demonstrated that this living wall was a powerful physical barrier made of "hard and strong spiritual stones," penetrable only spiritually. In the iconostasis, we might say, architecture and icon had truly merged in a quintessential symbolic statement.

Figure 23. Menologion icon, 11th century. Monastery of Saint Catherine, Mount Sinai, Egypt.

EAST MEETS WEST?

The increasingly important role of the iconostasis in Eastern Christian churches reached a high point in association with an artistic development referred to, if misleadingly, as "Post-Byzantine" art (15th–19th centuries). It was in this period that not only the physical dimensions of iconostases reached an unprecedented scale but their pictorial content acquired a level of complexity that may be thought of as competing with the painted mural program of church interiors. At times, and especially in areas under Ottoman domination, the iconostasis could, and on occasion did, replace the mural paintings

Figure 24. Icon of Saints Peter and Paul, Cretan-Venetian, 14th–15th centuries. Tempera on wood. Galleria dell'Accademia di Belle Arti, Florence (9382).

One of the most impressive examples in this category is the icon of Apostles Pete and Paul in the Galleria dell'Accademia di Belle Arti in Florence. Unsigned, the ico has been attributed to the Cretan painter Nikolaos Ritzos, active during the secon half of the fifteenth century (fig. 24).[75] It shares many of its characteristics with much larger icon depicting the same subject, now in the Municipal Museum, Corfu but dated to the late sixteenth or early seventeenth century (cat. no. 52).[76] In both cases, the two apostles are shown jointly holding a central-planned domed church in the middle of the composition while being blessed by Christ in Glory at the top of the panel. Both icons have aroused the interest of scholars on the basis of their iconogra- phy and architecture, but some of their more subtle symbolic messages deserve further analysis. The church model of the Florence icon displays some interesting departures from standard Byzantine conventions but also a clear adherence to central Byzantine theological principles. Shown in linear one-point perspective, the c[illegible]odel also betrays knowledge of Early Renaissance style and its evident im[illegible]e Cretan master. By simultaneously revealing the church interior and exter[illegible]g. 1), and displaying a typical Byzantine iconostasis, this depiction demonstr[illegible]he artist had not overstepped the boundaries of what was cons[illegible]an appr[illegible]presen- tation of architecture within the Byzantine aesthet[illegible]ork. U[illegible]ective

fifteenth-century painter na activities in the church were recor the entire project must have take complete.[74] The church itself was t sive remodeling in the sixteenth cen ceived, it was a structure lacking low-pitched, wooden roof and a flat c interior never had frescoes on its walls circumstances, Master Radul's originall (only three are preserved) iconostasis p church with an exclusive, fairly extensiv iconographic subjects, from the principal ico Mother of God and Christ flanking its Royal the icons depicting scenes from the lives of Chr the Mother of God, to those depicting individual tles and/or prophets, in the top tier, though this has been preserved. The iconostasis stretches from t

Figure 25. Georgios Kl
the Liturgy of the Righ
Sufferings in Hell, ca. 16
on wood; 81.5 x 53 cm. Se
dox Church of the Holy A
Sarajevo, Bosnia and Herze

and architectural style as they appear here, in other words, did not alter the essential Byzantine conventions regarding representation of sacred space and the understanding of the uncontainable and invisible God. By virtue of its placement in the church model, the iconostasis was given extraordinary prominence. Depicted as a centerpiece within the framework of the church-container of the uncontainable, the iconostasis itself commands the status of a sacred object, formally and functionally in keeping with its role within a Byzantine church.

Even more striking is the case of the icon showing the Liturgy of the Righteous and th[illegible]fferings in Hell from the Church of the Holy Archangels (Old Serbian Orthodox

Figure 24. Icon of Saints Peter and Paul, Cretan-Venetian, 14th–15th centuries. Tempera on wood. Galleria dell'Accademia di Belle Arti, Florence (9382).

altogether. This was the case in the Church of the Holy Archangels (Old Serbian Orthodox Church) in Sarajevo. Its iconostasis was the work of a well-known seventeenth-century painter named Radul, whose activities in the church were recorded in 1674, though the entire project must have taken several years to complete.[74] The church itself was the result of extensive remodeling in the sixteenth century. Simply conceived, it was a structure lacking a dome, with a low-pitched, wooden roof and a flat ceiling, while its interior never had frescoes on its walls. Under those circumstances, Master Radul's originally four-tiered (only three are preserved) iconostasis provided the church with an exclusive, fairly extensive range of iconographic subjects, from the principal icons of the Mother of God and Christ flanking its Royal Door, to the icons depicting scenes from the lives of Christ and the Mother of God, to those depicting individual apostles and/or prophets, in the top tier, though this has not been preserved. The iconostasis stretches from the north to the south exterior wall of the church, providing a statement of unique visual power. The significance of such iconostases was not only easily appreciated by virtue of their monumental presence and beauty, but on occasion it led to their becoming a subject depicted in its own right on several later icons.

One of the most impressive examples in this category is the icon of Apostles Peter and Paul in the Galleria dell'Accademia di Belle Arti in Florence. Unsigned, the icon has been attributed to the Cretan painter Nikolaos Ritzos, active during the second half of the fifteenth century (fig. 24).[75] It shares many of its characteristics with a much larger icon depicting the same subject, now in the Municipal Museum, Corfu, but dated to the late sixteenth or early seventeenth century (cat. no. 52).[76] In both cases, the two apostles are shown jointly holding a central-planned domed church in the middle of the composition while being blessed by Christ in Glory at the top of the panel. Both icons have aroused the interest of scholars on the basis of their iconography and architecture, but some of their more subtle symbolic messages deserve further analysis. The church model of the Florence icon displays some interesting departures from standard Byzantine conventions but also a clear adherence to central Byzantine theological principles. Shown in linear one-point perspective, the church model also betrays knowledge of Early Renaissance style and its evident impact on the Cretan master. By simultaneously revealing the church interior and exterior (see fig. 1), and displaying a typical Byzantine iconostasis, this depiction demonstrates that the artist had not overstepped the boundaries of what was considered an appropriate representation of architecture within the Byzantine aesthetic framework. Use of perspective

Figure 25. Georgios Klontzas, Icon of the Liturgy of the Righteous and the Sufferings in Hell, ca. 1600. Tempera on wood; 81.5 x 53 cm. Serbian Orthodox Church of the Holy Archangels, Sarajevo, Bosnia and Herzegovina.

and architectural style as they appear here, in other words, did not alter the essential Byzantine conventions regarding representation of sacred space and the understanding of the uncontainable and invisible God. By virtue of its placement in the church model, the iconostasis was given extraordinary prominence. Depicted as a centerpiece within the framework of the church-container of the uncontainable, the iconostasis itself commands the status of a sacred object, formally and functionally in keeping with its role within a Byzantine church.

Even more striking is the case of the icon showing the Liturgy of the Righteous and the Sufferings in Hell from the Church of the Holy Archangels (Old Serbian Orthodox

Church) in Sarajevo (fig. 25).[77] Painted around 1600, this is the work of the renowned Cretan painter Georgios Klontzas. The subject, an actual performance of the holy liturgy in a church, is most unusual in the tradition of Byzantine icon painting. The subject appears much closer to the Venetian than to the Byzantine norms, a phenomenon understandable because of Klontzas's familiarity with both. The manner in which the scene is represented, however, is revealing in a significant way. The center of the composition is dominated by the representation of a monumental iconostasis, shown frontally, in a manner resembling the iconostasis in the Florence icon. Beyond this, Klontzas depicts a deconstructed interior of a Byzantine church. The space is alluded to by partial use of one-point perspective, embellished with several saints and angels rendered in Mannerist style, as opposed to the strictly Byzantine conventions employed in the depiction of icons on the iconostasis. The *Parousia* (The Second Coming of Christ), which appears as a band at the top of the icon, and the Torments of Hell, a wider band at the bottom of the painting, add other elements of Mannerist realism to this icon, despite their thematic adherence to the Byzantine mural painting tradition and their relative placement within a typical church interior. The most unusual aspect of the painting is the inclusion of a monk preaching from a pulpit, as well as members of the congregation, arranged according to their social and hierarchic status in two groups, to the left and to the right of the iconostasis. Accompanied by lengthy didactic inscriptions in Greek, the icon betrays an overtly Western style and manner of representation. Nevertheless, the dominant presence of the iconostasis with a bishop depicted at its Royal Gates is a powerful reminder that the essential symbolic content of the Byzantine church interior has not been compromised, despite numerous innovations and modifications that have entered into the picture. The differing approaches of Western and Byzantine religious art are shown here in direct confrontation. Paradoxically, Klontzas, on the eve of the Baroque era, relied on realism and optical illusions while simultaneously demonstrating adherence to two-dimensionality as the principle mode of expression in Byzantine art. It is the iconostasis in his painting, however, that has retained its central symbolic role of separating the earthly from the heavenly realm, while highlighting continuing divisions between Western and Eastern Christian theological approaches as manifest in art.

The goal of the foregoing essay was to demonstrate the importance of the representation of architecture in Byzantine art from late antiquity to the nineteenth century. Inclusion of architecture within pictorial representations in Byzantine art, as we have seen, was always a deliberate choice and never an incidental matter. Byzantine perception and representation of architecture, however, differ sharply from our visual expectations, largely on account of our own visual training, which is strongly dominated by the legacy of Renaissance art and theory. This appears also to have had an effect on the way art historians have been inclined to read Byzantine religious paintings. Quite commonly, they found it expedient to exclude architecture from their consideration and to focus exclusively on the figurative content of the works they were analyzing. If discussed at all, Byzantine representations of architecture became vehicles for demonstrating the intrinsic weaknesses and limitations of Byzantine artists and their patrons.

Instead, as I hope this exhibition will have demonstrated, the real limitations were in the method of judging works of Byzantine art, without fully understanding the spiritual and intellectual objectives that informed its makers. Future approaches to the study of Byzantine art will have to take into account many pitfalls of past scholarship, including that of arbitrary selectivity. Only then will representations of architecture, based on Byzantine standards, be properly understood as essential and indispensable components of the artistic tradition that produced them.

NOTES

1. A. H. S. Megaw, "Background Architecture in the Lagoudera Frescoes," *Jahrbuch der Österreichischen Byzantinistik* 21 (1972): 195–201, is a rare early case of acknowledgment of the role of architecture in monumental painting. An effort at a more comprehensive examination of the problem with an overview of earlier historiography is Anka Stojaković, *Arhitektonski prostor u slikarstvu srednjovekovne Srbije* [French summary: L'espace architectural dans la peinture de la Serbie médiévale], Studije za istoriju srpske umetnosti 4 (Novi Sad: Matica srpska, 1970), albeit also limited geographically and focused exclusively on issues pertaining to space as depicted in monumental painting.
2. Before the 1990s, Henry Maguire's *Art and Eloquence in Byzantium* (Princeton: University Press, 1981) was an exceptional effort in offering significant new perspectives through exploring the relationship between Byzantine art and rhetoric. Earlier limited scholarly engagement with issues pertaining to Byzantine aesthetics in the West is highlighted in *Oxford Dictionary of Byzantium*, ed. Alexander P. Kazhdan (New York: Oxford University Press, 1991), vol. 1, 29, where merely half a page is devoted to the subject. The very term "aesthetics" in the Byzantine artistic context seems to lack a clear definition; it has been used in Western scholarship since about 1990 without consensus as to its precise meaning, while revealing inadequate engagement with some key philosophical and theological underpinnings that will be explored here. The range of new scholarly approaches in the West that have addressed the problem is a noteworthy phenomenon in its own right, but its exploration would take me far beyond the intended scope of this essay.
3. A sampling of this literature includes: Hans Belting, *Likeness and Presence: A History of Image before the Era of Art*, trans. E. Jephcott (Chicago, 1994); Henry Maguire, *The Icons of Their Bodies: Saints and Their Images in Byzantium* (Princeton: University Press, 1996); Charles Barber, *Figure and Likeness: On the Limits of Representation in Byzantine Iconoclasm* (Princeton: University Press, 2002); Glenn Peers, *Sacred Shock: Framing Visual Experience in Byzantium* (University Park: Pennsylvania State University Press, 2004).
4. Notwithstanding significant contributions, such as Liz James and Ruth Webb, "'To Understand Ultimate Things and Enter Secret Places': Ekphrasis and Art in Byzantium," *Art History* 14, no. 1 (March 1991): 1–17; Helen G. Saradi, "Beholding the City and the Church: The Early Byzantine *Ekphraseis* and Corresponding Archaeological Evidence," *DCHAE*, ser. 4, vol. 24 (2003): 31–36; and most recently, Helen G. Saradi, *The Byzantine City in the Sixth Century: Literary Images and Historical Reality* (Athens, 2006), esp. Part II, "The Image of the City in Literature and Art."
5. Nicolae Iorga's *Byzance après Byzance* (Bucharest: Institut d'Études Byzantines, 1935) was a pioneering effort at demonstrating aspects of Byzantine cultural continuity after 1453. It is now available in English: *Byzantium after Byzantium* (Portland: Center for Romanian Studies, Romanian Institute of International Studies, 2000). Only relatively recently have art historians, burdened by the term "Post-Byzantine Art," long since in use, begun—albeit sporadically—to question the validity of the term. The study of the artistic tradition itself, however, has mushroomed in recent decades while uncritically maintaining the established term "Post-Byzantine," and thereby perpetuating the still unresolved main problem.
6. John Meyendorff, "Was There Ever a 'Third Rome'? Remarks on the Byzantine Legacy in Russia," in John Meyendorff, *Rome, Constantinople, Moscow: Historical and Theological Studies* (Crestwood, N.Y.: St. Vladimir's Seminary Press, 1996), 130–46.
7. For more developed thoughts along these lines, see Slobodan Ćurčić, "Η 'απουσια του Βιζαντιου'. Ο ρολος ενός ονοματος" [The "absence of Byzantium"—the role of a name], *Νεα Εστια* 820, vol. 164, no. 1814 (Sept. 2008): 492–500.
8. First published in Florence in 1550, it was subsequently revised and republished in 1568: Giorgio Vasari, *Le vite de' più eccellenti pittori, scultori e architettori*, 9 vols., ed. R. Bettarini (Florence: Sansoni, 1966–). The quotation is from the most recent English edition: G. Vasari, *The Lives of the Painters, Sculptors and Architects*, 2 vols., trans. Gaston du C. de Vere (New York: D. Campbell, 1996), vol. 1, 51.
9. Vasari, *Lives*, vol. 1, 52.
10. Robert S. Nelson, "Byzantium and the Rebirth of Art and Learning in Italy and France," in *Byzantium: Faith and Power (1261–1557)*, ed. Helen C. Evans (New York: The Metropolitan Museum of Art, 2004), 516.
11. Erwin Panofsky, "Die Perspektive als 'Symbolische Form'," *Vorträge der Bibliothek Warburg, 1924–25*, ed. Fritz Saxl (Leipzig: Teubner, 1927): 259–330; also in English, Erwin Panofsky, *Perspective as Symbolic Form*, trans. Christopher S. Wood (New York: Zone Books, 1997); the modern pioneering work, referred to as a "textual threshold that must be crossed" by Hubert Damisch, *L'origine de la perspective* (Paris: Flammarion, 1987); and

the English edition, Hubert Damisch, *The Origin of Perspective*, trans. John Goodman (Cambridge, Mass.: MIT Press, 1994), a major critical historical overview and reassessment of the problem.

12. Viktor V. Bichkov (also spelled as Bychkov), *Vizantiiskaia estetika: Teoricheskie problemi* (Moscow: Iskusstvo, 1977), chap. 7 ("Kanon"/The Canon), offers an excellent detailed analysis of Eastern, esp. Russian, historiography related to the issues concerning representations of space in Byzantine and early Russian art, rejection of "constructed perspective," as well as the invention of "inverted perspective." He stresses the importance of the following contributions: Dimitrij V. Ainalov, *Ellinicheskie osnovi vizantiiskago iskusstva* (St. Peterburg, 1900) and the English translation by Elizabeth Sobolovitch and Serge Sobolevitch, *Hellenistic Origins of Byzantine Art* (New Brunswick, N.J.: Rutgers University Press, 1961), who first introduced the concept of inverted perspective; Pavel Florensky, "Reverse Perspective," presented as a lecture in 1920, but first published in Russian in 1967; the work appeared in English translation in Pavel Florensky, *Beyond Vision: Essays on the Perception of Art*, ed. by Nicoletta Misler (London: Reaktion, 2002), 172–82; Boris V. Raushenbakh, *Prostranstvennie postoroeniia v drevnerusskoi zhivopisi* [Spatial constructions in early Russian painting] (Moscow, 1975), who introduced the concept of "four-dimensional space"; A. A. Saltikov, "O prostranstvennikh otnosheniiakh v vizantiiskoi i drevnerusskoi zhivopisi" [On spatial relationships in Byzantine and early Russian painting], in *Drevnerusskoe iskusstvo* (Moscow, 1975), 398–413. Among the Western scholars, Bichkov singles out the contribution of Oskar Wulff, "Die umgekerte Perspektive und die Niedersicht. Eine Raumanschaungsform der altbyzantinischen Kunst und ihre Vorbildung in der Renaissance," in *Kunstwissenschaftliche Beiträge A. Schmarsow gewidmet zum fünfzigsten Semester seiner akademischen Lehrtätigkeit*, ed. Heinrich Weizsäcker (Leipzig: K. W. Hiersemann, 1907), 1–40, and Oskar Wulff, "Das Raumerlebnis des Naos im Spiegel der Ekphrasis," *BZ* 30 (1930): 53. For a critical assessment of "reversed perspective" as "a figment of the art critics' imagination," see Panagiôtês A. Michelis, "Neo-Platonic Philosophy and Byzantine Art," *Journal of Aesthetics and Art Criticism* 11, no. 1 (Sept. 1952), 21–45, esp. 31–34. Misler's discussion of the role of Florensky in *Beyond Vision* provides a very useful overview of the literature on the problem (85–93).
13. According to Florensky, "Reverse Perspective," 218, "in those historical periods of artistic creativity when the utilization of space is not apparent, it is not that the artists 'don't know how,' but that they 'don't want to'."
14. For a brief account, see W. Eugene Kleinbauer, *Early Christian and Byzantine Architecture: An Annotated Bibliography and Historiography* (Boston: G. K. Hall, 1992), lxxxi–xcix, "The Contribution of Russian Scholars to Byzantine Architecture"; Kleinbauer includes discussion of individual scholars, who—characteristically—most often dealt with architecture alongside painting, sculpture, and other media.
15. Notably, Bichkov, *Vizantiiskaia estetika* (see note 12 above). The work has been translated into other languages: cf. [Italian] Viktor V. Bychkov, *L'estetica bizantina: Problemi teorici* (Bari, 1983); [Greek] Viktor V. Bychkov, *Βιζαντινή αισθητική: Θεορετικά προβλήματα*, trans. K. P. Charalampidês (Athens, 1999); [Serbian] V. V. Bičkov, *Vizantijska estetika: Teorijski problemi*, trans. D. M. Kalezić (Belgrade, 1991). The Serbian edition is of some relevance for, in addition to having been revised, it has also been expanded to include three new chapters (IV. "Art," V. "Inner Aesthetic," and VI. "Ancient Traditions") that are not in the original Russian edition or in the cited translations in Western languages. An abridged English version, "Byzantine Aesthetics," is in *Encyclopedia of Aesthetics*, ed. Michael Kelly, vol. 1 (New York: Oxford University Press, 1998), 321–23.
16. Notably, Alexei Lidov, ed., *Ierotopiia: Sozdanie sakral'nikh prostranstv v Vizantii i drevnei Rusi* [Hierotopy: the creation of sacred spaces in Byzantium and medieval Russia] (Moscow: Indrik, 2006); acts of an international conference under the same title. See esp. Alexei Lidov, "Hierotopy. The Creation of Sacred Spaces as a Form of Creativity and Subject of Cultural History," in ibid., 32–58.
17. On this, see a more detailed discussion by Helen G. Saradi, "Space in Byzantine Thought," in this volume.
18. Bichkov, *Vizantijska estetika*, 138 f.
19. Ibid., 140–41.
20. On "spiritual seeing" more broadly, see Herbert L. Kessler, *Spiritual Seeing: Picturing God's Invisibility in Medieval Art* (Philadelphia: University of Pennsylvania Press, 2000). Notable is the influence of Pseudo-Dionysios on Abbot Suger in connection with the rebuilding of the Abbey Church of Saint Denis and the impact of Suger's ideas on the formative stages in the development of Gothic architecture; see E. Panofsky, *Abbot Suger: On the Abbey Church of Saint-Denis and Its Art Treasures* (Princeton: University Press, 2d ed., 1979), introduction, esp. 8 ff.; also Kessler, *Spiritual Seeing*, chap. 8.
21. Bichkov, *Vizantijska estetika*, 112 f.
22. Ibid., 117–18. For the role of Hesychasm, and of Gregory Palamas in particular, see Andreas Andreopoulos, *Metamorphosis: The Transfiguration in Byzantine Theology and Iconography* (Crestwood, N.Y.: St. Vladimir's Seminary Press, 2005), 209–42.
23. Paul C. Finney, *The Invisible God: The Earliest Christians on Art* (New York: Oxford University Press, 1994).
24. Bichkov, *Vizantijska estetika*, 153; David Anderson, *On the Divine Images: Three Apologies against Those Who Attack the Divine Images* (Crestwood, N.Y.: St. Vladimir's Seminary Press, 1980). This is not the place where a more detailed discussion of the works of Saint John of Damascus or the now extensive modern literature on the subject of icons could be fruitfully undertaken.
25. Bichkov, *Vizantijska estetika*, 153; Cyril Mango, *The Art of the Byzantine Empire, 312–1453: Sources and Documents* (Toronto, University of Toronto Press in association with the Medieval Academy of America, 1993), 172–73.
26. Mango, *Sources and Documents*, 171. For some new approaches to the subject, see Herbert L. Kessler and Gerhard Wolf, *The Holy Face and the Paradox of Representation: Papers from a Colloquium held at the Bibliotheca Hertziana, Rome, and the Villa Spelman, Florence, 1996* (Bologna: Nuova Alfa Editoriale, 1998).

27. Averil Cameron, "The History of the Image of Edessa: The Telling of a Story," in *Okeanos, Essays Presented to Ihor Ševčenko on His Sixtieth Birthday*, ed. Cyril A. Mango and Omeljan Pritsak (*Harvard Ukrainian Studies* 7, 1983) (Cambridge, Mass.: Ukrainian Research Institute, Harvard University, 1984), 80–94.
28. Eusebius, *Ecclesiastical History*, vol. 2, trans. Kirsopp Lake, John E. L. Oulton, and Hugh Jackson Lawler, Loeb Classical Library 265 (Cambridge, Mass.: Harvard University Press, 2000 [1932 ed.]), 10.4.21.
29. Ibid., 10.4.69.
30. Richard Stillwell, *Antioch-on-the-Orontes*, vol. 3 (Princeton: University Press, 1941), 153, pl. 30, no. 28.
31. Mango, *Sources and Documents*, 15–16.
32. *Kunst der Antike*, Gorny and Mosch, Giessener Münzhandlung, München, Auktion 158, June 22, 2007, lot 189. I am indebted to J. Michael Padgett, who brought this piece to my attention and who supplied me with the basic information and the image reproduced here.
33. Richard Krautheimer, *Three Christian Capitals: Topography and Politics* (Berkeley: University of California Press, 1983), chap. 2, esp. 62–63; also Garth Fowden, "Constantine's Porphyry Column: The Earliest Literary Allusion," *JRS* 81 (1991): 119–31 and Cyril A. Mango, "Constantine's Column," in *Studies on Constantinople* (Aldershot: Variorum, 1993), vol. 3, 67–90.
34. For the Philadelphion in Constantinople with an honorific column topped by a large cross, see Wolfgang Müller-Wiener, *Bildlexikon zur Topographie Istanbul* (Tübingen: Wasmuth, 1977), 267. Another example of a monumental column topped with a cross is recorded on a mosaic representation of Kastron Mefaa (present-day Umm al-Rasas, Jordan). See Saradi, *The Byzantine City in the Sixth Century*, 128–29 and fig. 12; also Glen W. Bowersock, *Mosaics as History: The Near East from Late Antiquity to Islam* (Cambridge, Mass.: Belknap Press of Harvard University Press, 2006), 66–67.
35. Robert Doran, trans., *The Lives of Simeon Stylites* (Kalamazoo, Mich.: Cistercian Publications, 1992); Ignacio Peña et al., *Les Stylites syriens* (Milan: Centro Propaganda e Stampa, Franciscan Printing Press, 1975).
36. Kurt Weitzmann, ed., *Age of Spirituality: Late Antique and Early Christian Art, Third to Seventh Century*, exh. cat. (New York: The Metropolitan Museum of Art, 1979), 589–90.
37. Robert G. Ousterhout, "The Virgin of the Chora: An Image and Its Contexts," in *The Sacred Image East and West*, ed. Robert G. Ousterhout and Leslie Brubaker (Urbana: University of Illinois Press, 1995), 108–24.
38. Čedomila Marinković, *Image of the Completed Church: Representations of Architecture on Founders' Portraits in Serbian and Byzantine Art* (Belgrade: Princip Bonart Press, 2007), in Serbian with an English summary, is the most recent comprehensive study advocating a particular viewpoint, but it also provides a detailed overview of older literature on the subject. See Yannis D. Varalis, "Εισαγογη—Επισκοπη της ερευνας," in *Architectural Models in Medieval Architecture (Byzantium, S. E. Europe, Anatolia)*, Proceedings of Seminar 3, ed. Y. D. Varalis, AIMOS Seminar Series II, Theoretical Issues in Medieval Architecture, dir. Evangelia Hadjitryphonos (Thessaloniki: University Studio Press, 2009), 11–21.
39. Cyril A. Mango, *Materials for the Study of the Mosaics of St. Sophia at Istanbul*, Dumbarton Oaks Studies 8 (Washington, D.C.: Dumbarton Oaks Research Library and Collection, 1962), 23–24, pl. 5.
40. John A. Cotsonis, "The Virgin and Justinian on Seals of Ekklesiekdikoi of Hagia Sophia," *DOP* 56 (2003): 41–55; also M. Boutyrsky, "The Seals of the Great Church: The Image of the Sacred Space in the Byzantine Sphragistic Iconography," in Lidov, ed., *Ierotopiia*, 465–74, in Russian with an English summary.
41. Maguire, *Icons of Their Bodies*, passim. The notion was formulated clearly by Byzantine theologians, most notably by Saint John of Damascus; cf. Mango, *Sources and Documents*, 171.
42. S. Mnats'akanian, *Aghtamar: The Church of the Holy Cross, 915–921* (Los Angeles: Editions Erebouni, 1986), and most recently, Lynn Jones, *Between Islam and Byzantium: Aght'amar and the Visual Construction of Medieval Armenian Rulership* (Burlington, Ver.: Ashgate, 2007), chap. 4, esp. 59–61.
43. Christina Maranci, "Architectural Models in the Caucasus: Problems of Form, Function, and Meaning," in *Προπλασματα*, ed. Varallis, 49–55.
44. Jones, *Between Islam and Byzantium*, chap. 3.
45. Slobodan Ćurčić, *Gračanica, King Milutin's Church and Its Place in Late Byzantine Architecture* (University Park: Pennsylvania State University Press, 1979), 28 and pl. 28.
46. Miloš S. Milojević, *Putopis dela prave (Stare) Srbije* (Belgrade: U Državnoj štampariji, 1872; repr. Nikola Pašić, 1998), vol. 2, 151. Milojević evidently owned such a model, but the photograph reproduced here was published later, by Spiridion Gopčević, *Makedonien und Alt-Serbien* (Vienna: L. W. Seidel, 1889), plate on p. 232.
47. Ćurčić, *Gračanica*, pl. 1.
48. Bojana Radojković, *Masterpieces of Serbian Goldsmiths' Work, 13th–18th Century* (London: Victoria & Albert Museum, 1981), 62–63.
49. G. Bühl, "Mitteltafel eines Triptychons—die Vierzig Märtyres von Sebaste," in *Die Welt von Byzanz—Europas östliches Erbe: Glanz, Krisen und Fortleben einer tausendjährigen Kultur*, exh. cat., Museum für Vor- und Frühgeschichte München, ed. Ludwig Wamser (Stuttgart: Theiss, 2004), 166–67.
50. Ernst Kitzinger, *The Mosaics of the Church of Saint Mary's of the Admiral in Palermo* (Washington, D.C.: Dumbarton Oaks Research Library and Collection, 1991), detailed discussion, 124–33; pls. I-3 and 4.
51. Moscow, State Historical Museum, GIM, Sin. 1043 (Sin. 31-d), fol. 3v. Helen C. Evans and William D. Wixom, eds., *The Glory of Byzantium: Art and Culture of the Middle Byzantine Era, A.D. 843–1261*, exh. cat. (New York: The Metropolitan Museum of Art, 1997), 282.
52. Svetozar Radojčić, "Temnićki natpis. Sujeverice srednjovekovnih graditelja o čudotvornoj moći imena i likova sevastijskih mučenika" [The Temnić inscription: superstitions among medieval builders concerning miraculous

powers of the names and images of the Martyrs of Sebaste], *Zbornik za likovne umetnosti* 5 (1969): 3–11, in Serbian with a French summary.

53. For Saint Sophia in Kiev, see Viktor N. Lazarev, *Mozaiki Sofii Kievskoi* (Moscow: Iskusstvo, 1960), 125–32; for Nereditsa, N. Sichev and Vladimir K. Miasoedov, *Freski Spasa-Nereditsy* (Leningrad: Gos. Russkiĭ Muzeiĭ, 1925), 25, 27, and 29; for the Oratory of Saint Lucia in Syracuse, Giuseppe Agnello, *Le arti figurative nella Sicilia bizantina* (Palermo: Istituto Siciliano di Studi Bizantini e Neoellenici, 1962), 162–69; for Lesnovo, Smiljka Gabelić, *Manastir Lesnovo: Istorija i slikarstvo* (Belgrade: Stubovi Kulture, 1998), 60–61; for Matejić, Elizabeta Dimitrova, *Manastir Matejče* (Skopje: Centar za Kulturno i Duhovno Nasledstvo Kalamus, 2002), 78–79; for Pljevlje, Sreten Petković, *Zidno slikarstvo Pećke patrijaršije (1557–1614)* (Novi Sad: Matica Srpska, 1965), 108 and 189, with a detailed discussion of the phenomenon in later Serbian painting.
54. On prophylactic practices in Late Antique and Early Byzantine architecture, see Slobodan Ćurčić, "Design and Structural Innovation in Byzantine Architecture before Hagia Sophia," in *Hagia Sophia from the Age of Justinian to the Present*, ed. Robert Mark and A. S. Çakmak (Cambridge: Cambridge University Press, 1992), esp. 16–20.
55. The sixth-century poet Paul the Silentiary, in *Descriptio S. Sophiae*, describes this arrangement in considerable detail, stressing also that at the base of the dome is "a narrow path like a fringe upon which a lamplighter may fearlessly walk round and kindle the sacred lights"; this indicates that the base of the dome was intended to be ringed with lights day and night. See Mango, *Sources and Documents*, 83.
56. On the symbolic use of numbers, see Richard Krautheimer, "Introduction to an 'Iconography of Medieval Architecture,'" *JWarb* 5 (1942): 1–33; rpt. in Richard Krautheimer, *Studies in Early Christian, Medieval, and Renaissance Art* (New York: New York University Press, 1969), 115–49, esp. 122 f. Also see R. M. Thomson, "Number Symbolism and Patristic Exegesis in Some Early Armenian Writers," *Handes Amgorya = Zeitchrift für armenische Philologie* 19 (1976): 117–38, discussing a long list of numbers—including forty—with their symbolic meanings.
57. Louis-Hugues Vincent and Félix-Marie Abel, *Jérusalem: Recherches de topographie, d'archéologie et d'histoire*, pt. 2, fasc. 3 (Paris: J. Gabalda, 1914), 244.
58. Stephen R. Zwirn, "Censer," in *Antioch, the Lost Ancient City*, ed. Christine Kondoleon (Princeton: University Press, 2000), 162, no. 49.
59. For the introduction of incense in Early Byzantine churches, see B. Caseau, "Incense and Fragrances: From House to Church. A Study of the Introduction of Incense in the Early Byzantine Christian Churches," in *Material Culture and Well-Being in Byzantium (400–1453), Proceedings of the International Conference (Cambridge, 8–10 September 2001)*, ed. Michael Grünbart et al. (Vienna: Verlag der Österreichischen Akademie der Wissenschaften, 2007), 75–92.
60. William D. Wixom, "Processional Cross and Four Cross Bases," in *The Glory of Byzantium*, 55–57; also C. Schmidt, "Stabausatz," in *Die Welt von Byzanz—Europas Östliches Erbe*, 131.
61. See note 34 above.
62. Wixom, "Processional Cross and Four Cross Bases." Such windows, it should be noted, appear in the architecture and painting of Cappadocia during the very same time period and may be relevant in pinpointing the origins and the chronological framework of this entire group of bronze cross bases, but further investigation of this question would take us well beyond the scope of this paper.
63. A significant contribution in this regard, in addition to those by James and Webb, "'To Understand Ultimate Things and Enter Secret Places'," 11, and Saradi, "Beholding the City and the Church," 33–34, is Ruth Webb, "The Aesthetics of Sacred Space: Narrative, Metaphor, and Motion in *Ekphraseis* of Church Buildings," *DOP* 53 (1999): 59–74.
64. Prokopios, *Buildings*, English trans. by Hugh B. Dewing, Loeb Classical Library (Cambridge, Mass.: Harvard University Press, 1954), I.i.45–47, p. 21.
65. Ibid., I.i. 47–49, pp. 21–23.
66. Seemingly paradoxically, "architecture" and "construction" are the terms chosen to describe an analysis of a poetic work by Paul the Silentiary: R. Macrides and P. Magdaleno, "The Architecture of *Ekphrasis*: Construction and Content of Paul the Silentiary's Poem on Hagia Sophia," *BMGS* 12 (1988): 47–82.
67. Cyril Mango and John Parker, "A Twelfth-Century Description of Saint Sophia," *DOP* 14 (1960): 233–45. The author of this description, one Michael the Deacon, underscores the distinction between the "eternal newness [of the church] in Christ"' visible only to the "eyes of the soul" (the interior), and the size and richness of the building visible to the eyes (the exterior). Of special relevance here is the mention of *size* (physical scale) as being relevant only to the human eye, and therefore, of no spiritual significance.
68. Here I must register my difference of opinion with Glenn Peers, *Sacred Shock* (note 3 above), unless his concept of "framing" were to be understood in a symbolic sense.
69. The geometric allusions of the cube (earthly domain) and the semicylinder (heavenly domain) closely match the "model of the Universe" as articulated in an illumination in the *Christian Topography* of Kosmas Indikopleustes; see the essay by Helen G. Saradi in this volume, "Space in Byzantine Thought," fig. 18.
70. Otto Demus, *Byzantine Mosaic Decoration: Aspects of Monumental Art in Byzantium* (reprint, New Rochelle, N.Y.: Caratzas Bros, 1976), 5.
71. Iconostasis has been the subject of numerous studies by scholars in different disciplines and has, therefore, been interpreted in a variety of ways. This is not the place to broach this complex topic. The following works may serve as useful guides in the present context: Pavel Florensky, *Iconostasis*, trans. Donald Sheehan and O. Andrejev (Crestwood, N.Y.: St. Vladimir's Seminary Press, 2000), written in 1922, but not published until much

later, offers a powerful theological interpretation of the iconostasis. The most important recent collection of essays is *Ikonostas: proischozhdenie, razvitie, simvolika* [Iconostasis: origins, evolution, symbolism], ed. Alexei Lidov (Moscow: Progress-Traditsiia, 2000). Also Sharon E. J. Gerstel, ed., *Thresholds of the Sacred: Architectural, Art Historical, Liturgical, and Theological Perspectives on Religious Screens, East and West* (Washington, D.C.: Dumbarton Oaks Research Library and Collection, 2006), esp. the paper by Nicholas P. Constas, "Symeon of Thessaloniki and the Theology of the Icon Screen," 163–83.

72. Florensky, *Iconostasis*, 62. Italic emphasis added.
73. Ibid., 61–62.
74. Svetlana Rakić, *Serbian Icons from Bosnia-Herzegovina: Sixteenth to Eighteenth Century* (New York: Pankovich, 2000), 192–96; Svetlana Rakić, *Ikone Bosne i Hercegovine (16–19. vijek)* (Belgrade: Republički Zavod za zaštitu spomenika kulture, 1998), 46–49, fig. XIV.
75. N. Chatzēdakē, *Από τον Χανδακα στη Βενετια. Ελλενικες εικονες στην Ιταλια. 15ος–16ος αιονας*, exh. cat. (Athens, 1993), 76–80, pls. 16 and 16a; A. Davidov-Temerinski, "Edifice idéal ou réel? Le model de l'église que les apôtres Pierre et Paul tiennent ensemble," in *Nouvelles données sur les peintures Byzantines en Yougoslavie*, ed. Tania Velmans, Cahiers Balkaniques 31 (Paris: Publ. Langues'O, 2000), 39–56; and most recently, Athanassios Semoglou, "Το ομοιομα του Ναου του Κυριου (*Templum Domini*) *στη ματαβιζαντινη εικονογραφια*" [Representations of the Temple of the Lord (Templum Domini) in post-Byzantine iconography], in *Architectural Models in Medieval Architecture*, ed. Varalis, 67–77.
76. Despina Evgenidou, "Saints Peter and Paul," in *Icons Itinerant: Corfu, 14th–18th Century, June–September 1994, Church of Saint George in the Old Fortress, Corfu* (Athens: Greek Presidency of the European Union, 1994), 104–7, with references to older literature. There is ongoing debate regarding major discrepancies in the dating of these two pieces.
77. Panayotis L. Vokotopoulos, "Μια αγνοστη εικονα στο Σαραγεβο," *DCHAE*, ser. 4, vol. 12 (1984): 383–98; Olga Gratziou, "Η εικονα του Γεοργιοθ Κλοντζα στο Σαραγεβο και τα επιπεδα σεμασιον της" [The icon by Georgios Klontzas at Sarajevo and its successive levels of meaning], *DCHAE*, ser. 4, vol. 14 (1989): 9–32; also Rakić, *Ikone*, 243–46.

Presentations and Representations of Architecture in Byzantium: The Thought behind the Image

EVANGELIA HADJITRYPHONOS

Then if it be really true that things can be learned either through names or through themselves, which would be the better and surer way of learning? To learn from the image whether it is itself a good imitation and also to learn the truth which it imitates or to learn from the truth both the truth itself and whether the image is properly made?

—Plato

An image is a likeness, an exemplar or an imprint [ektypōma] of something, such as to show in itself the subject represented . . . surely, the image is not in all respects similar to the prototype, i.e., its subject; for the image is one thing and the subject another, and there is necessarily a difference between them.

—Saint John of Damascus

Scholarship has hitherto dealt only summarily with the thought behind visual representations of Byzantine architecture described in texts and drawings. The representation of architecture in Byzantium as part of the creative process in architectural design and production has likewise been barely studied and evaluated. Because the survival of actual plans and models made for working or display purposes is so limited, a widespread assumption has been that Byzantine architects did not use such drawings or models at all. Only in recent years has this prevalent point of view begun to crack. An idea has gradually been gaining ground that something quite different must have taken place in recording architectural thought in Byzantium as well as in the medieval West.

Since its inception in 1999, the "Architecture as Icon" research project has considered the role of drawings and models in the production of Byzantine architecture, but such considerations could not be profitably included here. Still, the project has opened the door for discussing different implications of representations of architecture, some of which do relate to the representations of ideas pertaining to the very process of architectural creation. This essay, therefore, aims to bring into focus questions concerning the intellectual process of architectural creation in Byzantium, and how that process was recorded. Ultimately, it also examines this process in relation to the extensive body of preserved representations of architecture in Byzantine art.

Detail of cat. no. 61. Icon with the Miracle of the Blessed Alexander Svirskii.

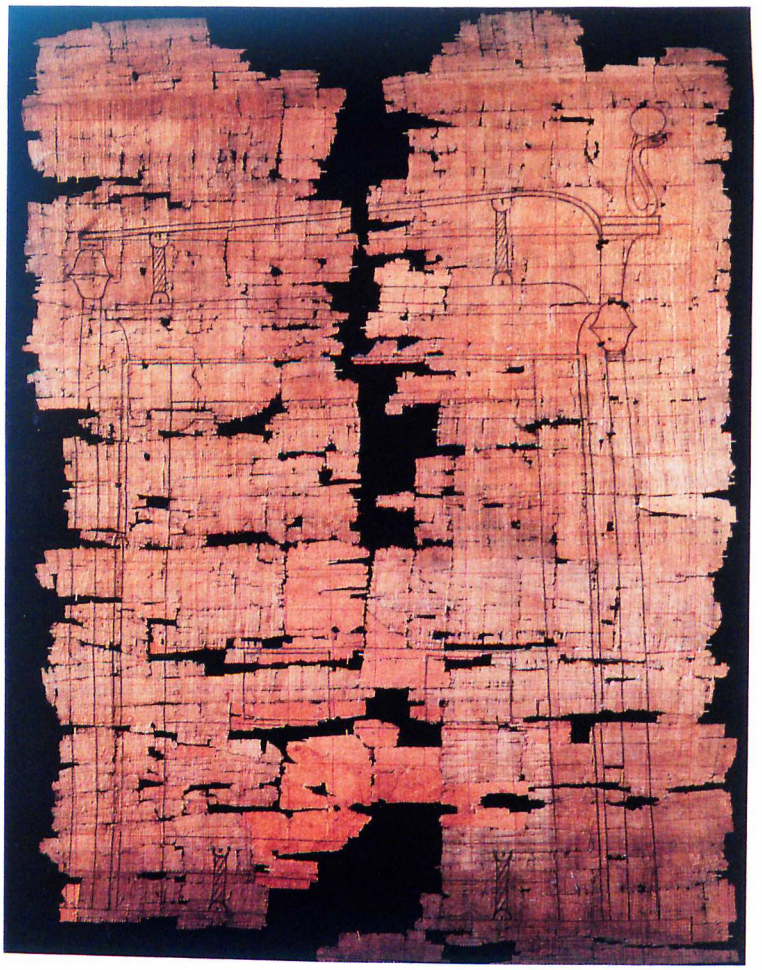


Figure 1. Ancient Egyptian drawing. Papyrus Ghorab, Dynasty 18. University College, London.

HISTORIOGRAPHY

A relatively small number of scholars have addressed the issue of recording Byzantine architecture during the design stages. Among the pioneering efforts was an article dealing with the broader Balkan area, published in 1967 by Milka Čanak-Medić.[1] More recently, Robert Ousterhout addressed in part the question of architectural design in Byzantium[2] while his arguments have been countered by Charalambos Bouras[3] and Stavros Mamaloukos.[4]

While several studies have been devoted to representations of architecture in art,[5] these have relied on the problematic concept of "inverted perspective";[6] and the subject of Byzantine architectural drawings has not been systematically treated. An exception is the study by Philippos Oreopoulos, whose approach is the first attempt at broaching the issue of representations of architecture.[7] In his work, Oreopoulos provides a comprehensive analysis of theoretical architectural discourse in Byzantium from the eleventh century to modern times.

A number of scholars in the Balkans and Russia, by contrast, approached the question of architectural drawings in Byzantium, focusing exclusively on the issue of harmonic proportions.[8] These studies have been written chiefly by architects interested in the theory and production of architecture, and in some cases, by individuals who, having assimilated the Western scholarly tradition, attempted to comprehend the thinking in the design process related to Byzantine architecture. The results of this research are interesting because they testify to the continuity between the ancient and medieval worlds in terms of the systems of measurement and geometry that remained an integral part of the planning and design process.[9]

ORIGINS AND TYPES OF REPRESENTATIONS

Architectural representation using diverse techniques and different materials is a phenomenon attested since ancient times and is closely related to the creative act. Representations of plans, elevations, and orthogonal projections of buildings were well known in ancient Mesopotamia and Egypt (fig. 1), and in Greece, as attested by the presence of *paradeigmata* (παραδείγματα, drawings).[10] Their use continued through the Hellenistic period, as recorded in the work of Vitruvius.[11] Drawings representing buildings also appear in the later Roman era, as in the third-century A.D. Forma Urbis Romae.[12] According to excavation finds, scale plans and models follow ancient visual representations, such as an example of a three-storied house at Urartu, which dates from the first millennium B.C.[13]

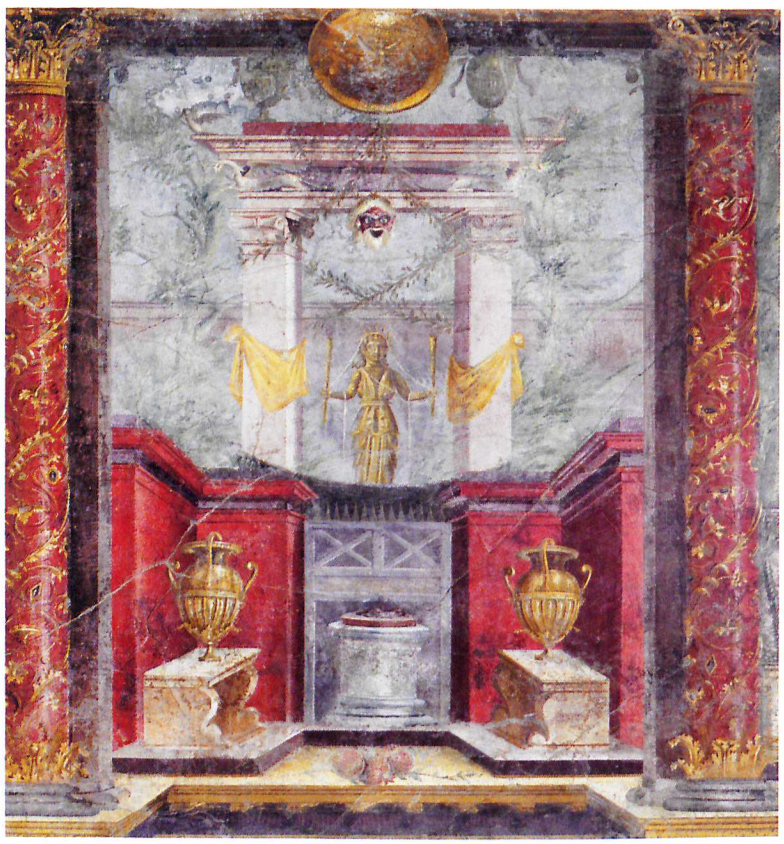


Figure 2a, b. Architectural representations in Roman wall painting. (a) Villas, detail of a wall painting from the House of Marcus Lucretius Fronto, Pompeii. (b) Entrance to a sanctuary, detail of trompe l'oeil architecture painted in the cubiculum of the Villa of P. Fannius Synistor, Boscoreale, 50–40 B.C. The Metropolitan Museum of Art, Rogers Fund, 1903 (3.14.13a–g).

Representations from Classical antiquity,[14] Hellenistic times, and the Roman era,[15] particularly paintings from Pompeii (fig. 2a, b) and Stabia,[16] show that a type of perspective, the so-called linear perspective, was well known and used widely as a way of visually dealing with space.[17] In addition, ancient stage-set design (σκηνογραφία) contributed significantly to the solution of problems posed by scientific research into illusionistic representations of space.[18] Similarly, geography included advanced studies on matters of geometric projection.[19]

The question arises whether drawings, models, and orthogonal projections continued to be used uninterruptedly since antiquity, or whether there was a break in that

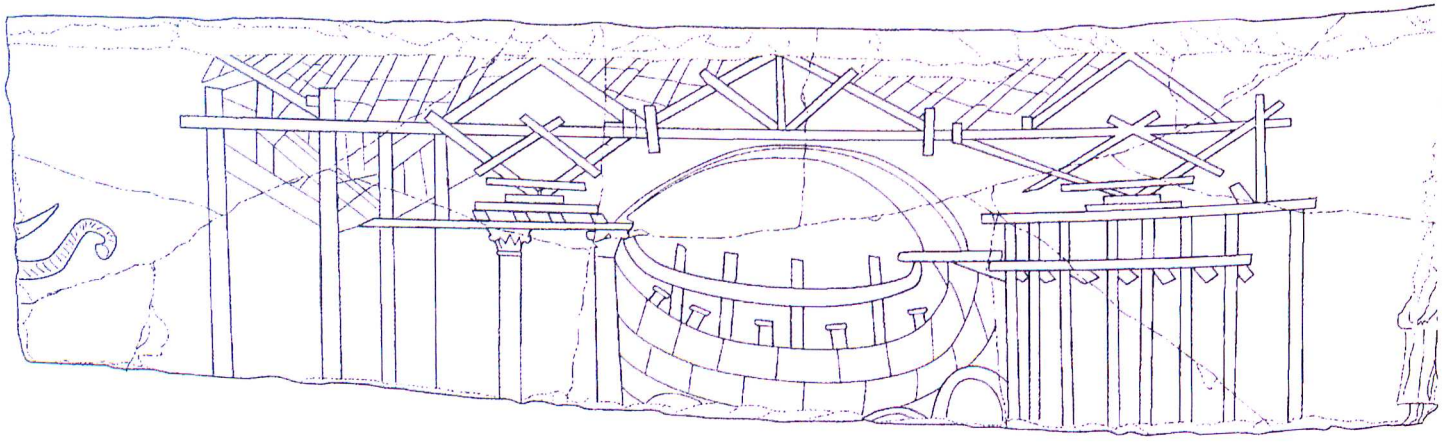


Figure 3. Representation of the construction of a timber amphitheater, 1st century A.D. Marble. Palazzo della Cancelleria, Rome.

tradition. The Graeco-Roman past inherited by Byzantium as an inseparable part of its social development included professional experience and know-how within its own artistic tradition. Thus, there appears to be no reason to assume that practices documented and widely used by Romans did not continue under certain preconditions in later times, both in the eastern and western parts of the Roman Empire. The idea that there was no continuity between antiquity and the Renaissance in matters of architectural drawing must be revisited. The view that drawing methods were forgotten in the Middle Ages and started to develop again in Gothic architecture is a matter of discussion for Central and Western European scholarship, but there are no compelling reasons why this debate should also apply to Byzantium—even at times of radical scaling down of religious building. Rather, it seems that the complexity of design and compositional drawings in the rendering of a whole edifice constitutes a consciously new approach in the Middle Ages.[20]

Figure 4. Representation of Apollodorus's bridge spanning the Danube, depicted on the Column of Trajan, Rome, A.D. 106–113.

To understand the history of drawing in the eastern part of the Christian Roman Empire and within its sphere of influence, it is important to examine the continuities and discontinuities, particularly regarding the methods of representation. Which aspects were continued and which were discontinued? How did they relate to the meaning of architectural drawings and to the so-called concept of oral transmission? Did this period really constitute the prehistory of design?[21] Any attempt to respond to these questions should take into account that representations of architecture as contained in memory are expressed through both oral and written discourse (λόγος), including drawing. With respect to drawing, in Byzantine pictorial compositions, at least, the multicentricity constitutes a characteristic with diverse ramifications.

Representations of architecture in Byzantium were produced for various reasons. Their creation served professional

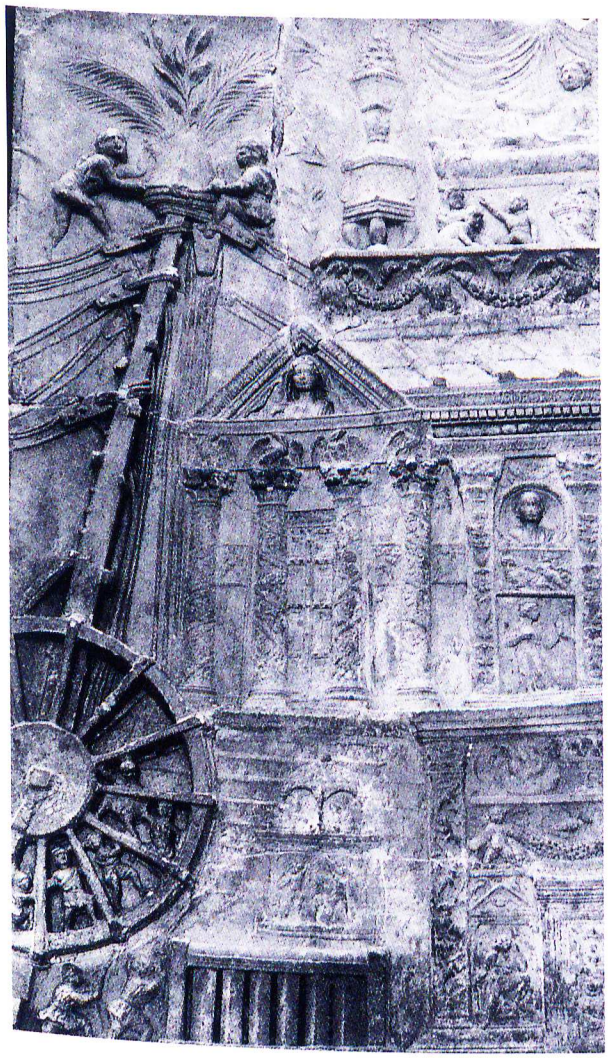
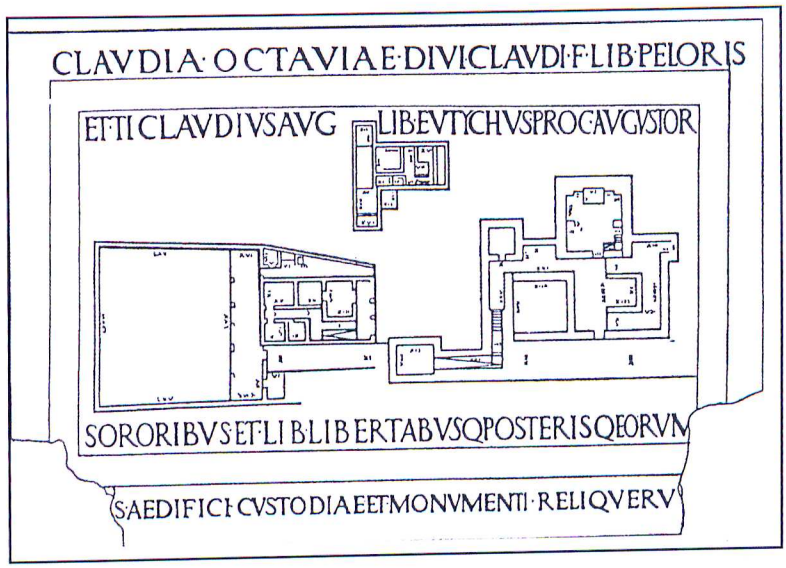


Figure 5. Relief depicting a construction crane in front of the tomb of the Haterii, a private mausoleum, 2d century A.D. Marble. Haterii Mausoleum, Musei Vaticani, Rome.

Figure 6. Funerary plaque, from Perugia, showing the plan of a royal residence, 1st century A.D.



and documentary purposes, but also artistic, spiritual, and symbolic ones. There are two essential categories of representations: those that depict works of architecture that existed in reality or in the imagination of their creators, and those that suggest planning before the implementation of a project. Distinguishing between these two categories is still an issue open for further analysis.

Since the aims of representations differed, their parameters developed accordingly. Several representations from the Roman imperial period—a marble tablet depicting a timber-constructed amphitheater (fig. 3),[22] a depiction of Apollodorus's bridge spanning the Danube (fig. 4), a marble relief depicting a crane at work in front of a temple-like building (fig. 5), and a marble slab with an incised plan for a Roman imperial villa (fig. 6)—are but a few examples that seem to indicate an awareness of the importance of contemporary construction feats and a particular desire to record and reproduce them in places visible to the public.

An analysis of the scale representation of the urban plan of Rome engraved on marble, well known as the Forma Urbis Romae (208–211),[23] illuminates its functional as well as symbolic and decorative elements (fig. 7).[24] Dated a century after Vitruvius and more than a century before the new era that commenced with the founding of

Figure 7. One of the fragments of the Forma Urbis Romae (fragment 109), showing a large section of the Subura neighborhood on the Oppian Hill, including the Clivus Suburanus and a small bath (*balneum*), early 3d century A.D. Marble. Museo della Civiltà Romana, Rome (EUR).

Constantinople, the Forma Urbis Romae relies on a linear rendering in which building walls generally have no thickness. Comprised of 150 pieces arranged in 11 rows, the plan measured approximately 18.10 by 13 meters, constituting a gigantic plan of the city at a scale of 1:240. It was displayed in the *aula* of the Templum Pacis in Rome.[25] Research has shown that the marble plan was a close copy of a more detailed and constantly updated map drawn on papyrus and used for administrative purposes. It was, in fact, a *representation* of a *presentation* of an original cadastral map on papyrus,

Figure 8. Representation of the plan of a three-aisled basilica with narthex, from Ohrid, probably 5th century. Ceramic tile. Ohrid National Museum, Former Yugoslav Republic of Macedonia.

Figure 9. Representation of the plan of an elongated tetraconch church, from Ohrid, probably 5th century. Ceramic tile. Ohrid National Museum, Former Yugoslav Republic of Macedonia.

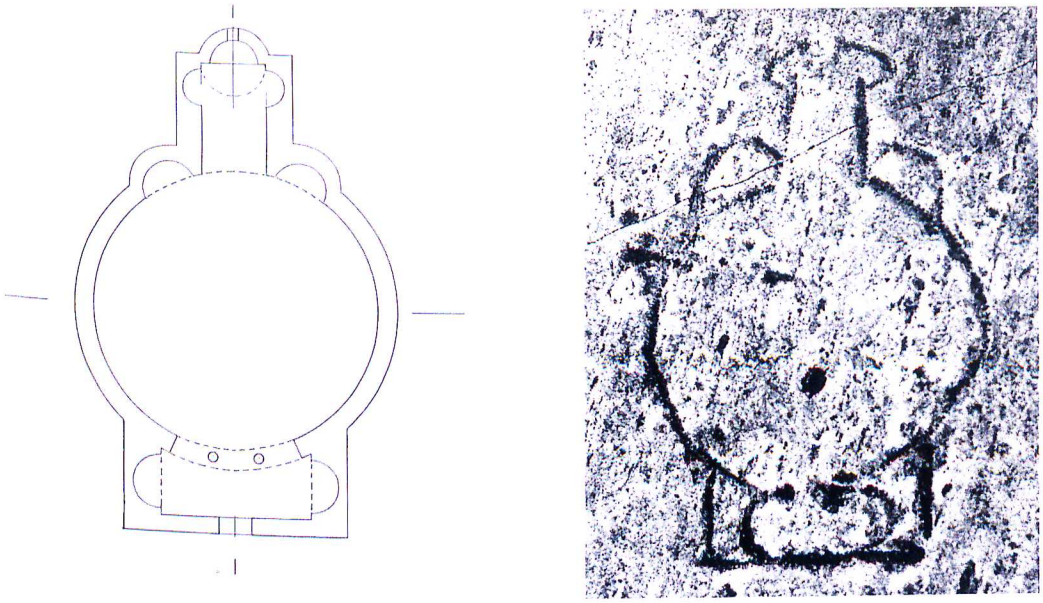


Figure 10a, b. Drawing and photograph of the incised marble plan of a rotunda with a triconch sanctuary and a narthex with apses at its ends, on the Pompeium in Athens, 5th–6th centuries.

a document used by the urban prefect's office.[26] This in itself confirms the continuation of the use of perishable materials for drawings as an older practice well known for centuries. Such drawings may not have been common, but they were certainly known. Their use in simpler form and in materials different from the original so that they could be attached to a wall as objects with a functional but also decorative and symbolic character reveals a particularly advanced aesthetic mentality.

Of particular interest in terms of the design tradition in the Byzantine sphere of influence are two incised sketch plans (χαράγματα) on ceramic tiles found in Ohrid, F.Y.R.O.M., probably dating from the fifth century, and an incised plan on marble found on the Pompeium in Athens, from the fifth or the sixth century.[27] The first example (fig. 8) represents a three-aisled basilica with a narthex and a chapel on the south and possibly another one on the north side, whereas the second example (fig. 9) depicts an elongated tetraconch church.[28] The third example (fig. 10a, b) features a representation of a rotunda with a triconch sanctuary and a narthex with apses at its ends. These plans on stone or ceramic are perhaps very modest examples, ideogram-like rough sketches, probably the work of masons trying to convey an idea while working. They reveal that these draftsmen not only had the ability to make abstract diagrammatic representations, but that they also knew and understood other types of drawings made with greater precision on different materials.[29] Furthermore, they indicate that the idea of a drawing, and, even more significantly, the notion of an incised plan (ιχνογραφία) were very familiar and understandable to broad social groups. Under certain conditions, such renderings assumed particular importance, as demonstrated by a stone relief depiction of a church at Korogo, Georgia, which represents the founder and his family standing beside the church floor plan (fig. 11).[30]

Another kind of representation, made as a design concept for the patron's consideration, also seems to have been known. Its importance, as such, would have been very different from that of representations made during or after construction. Patrons' models on wall paintings extant in many Byzantine and also medieval

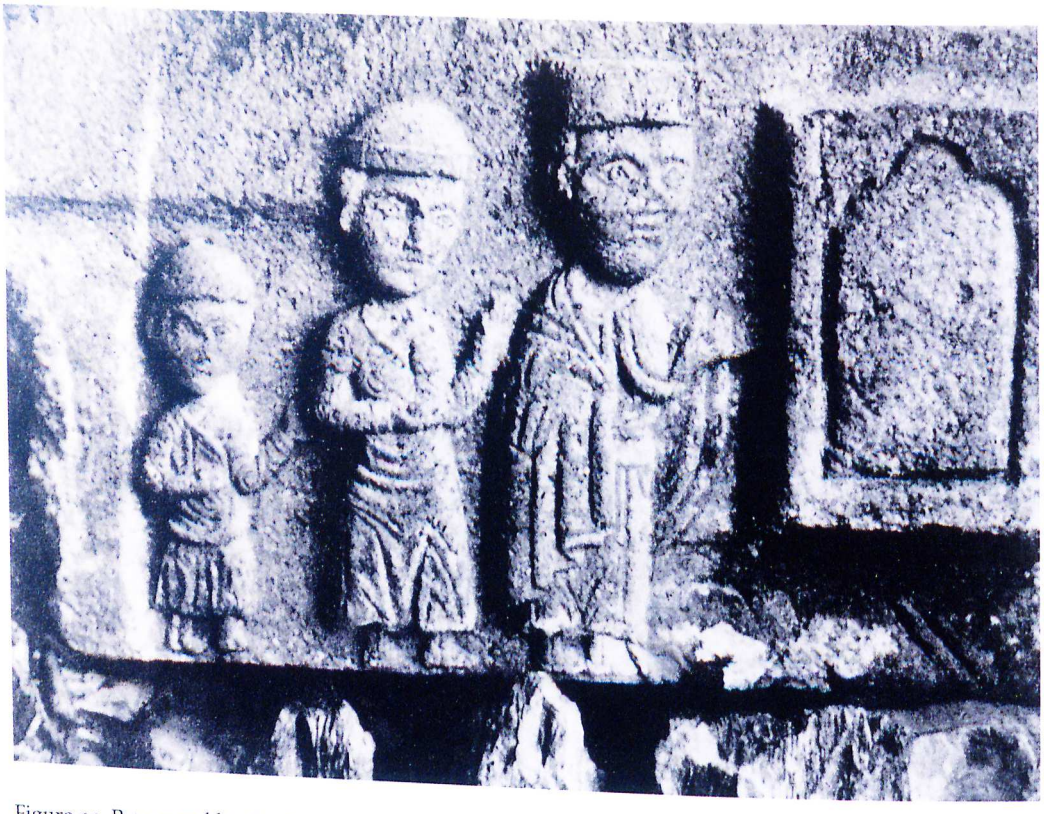


Figure 11. Patron and his family standing next to the representation of the floor plan of the church at Korogo, Georgia, late 10th–early 11th centuries.

Western European churches are testimonies of the existence of such representations and of the value attached to them. Yet, as Byzantine preliminary drawings or models have not survived, their exclusive presence on wall paintings led scholars to argue against the possibility that they may have once existed. The sole surviving architectural model, recently discovered on Mount Athos, was made in the eighteenth century (see fig. 29).[31] As a document of the then-current architectural practice, it also reflects modern mind-set. As the only surviving example of such models, it says much about the fate of such objects, which apparently were not kept after the completion of their initial function. Further research, still needed on this topic, will provide much information on various matters, including but not limited to, architectural design.

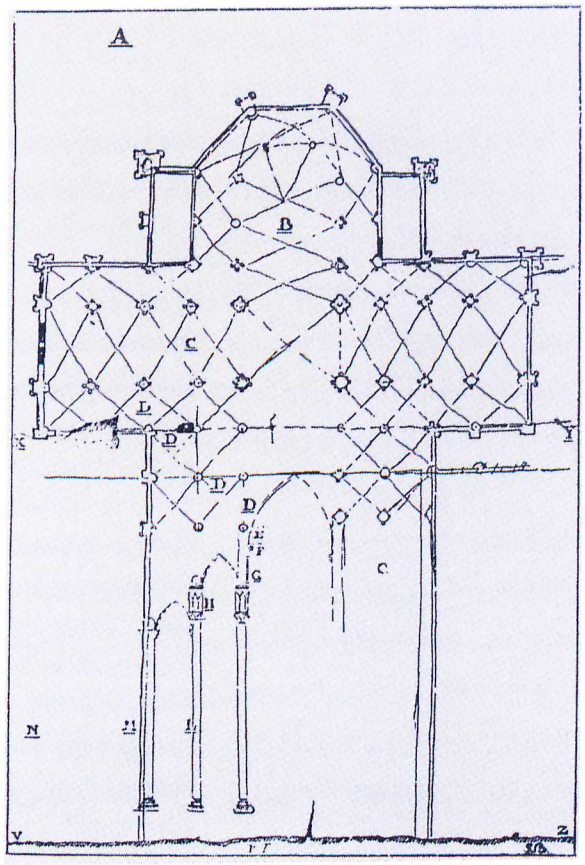
RESEARCH CHALLENGES AND CONCERNS

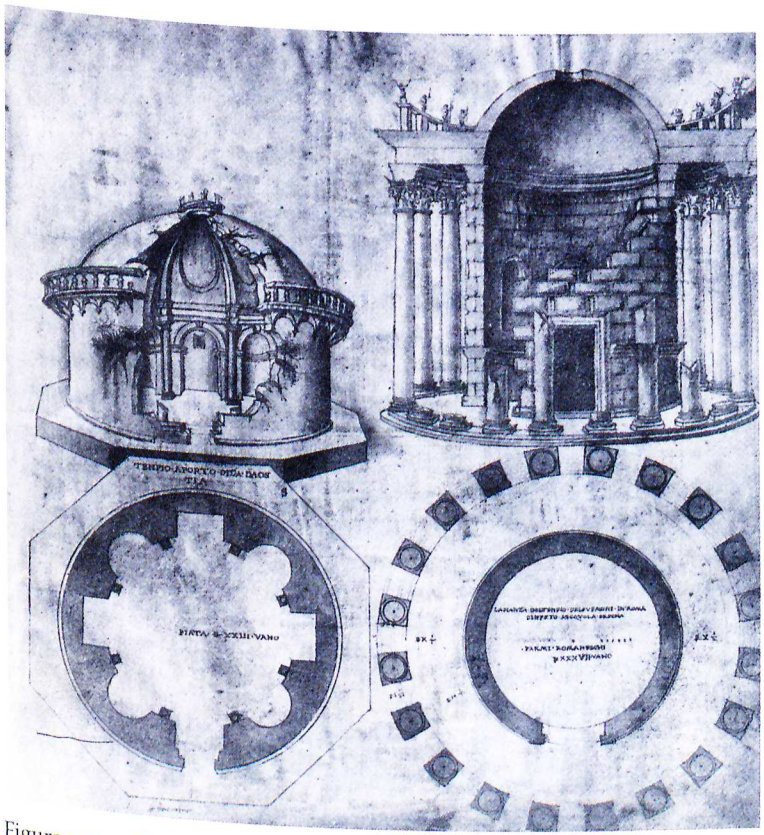
In Byzantium, as already mentioned, representations of architecture were made for spiritual, symbolic, artistic, professional, and other reasons. Art representations in general and representations of architecture in particular, were not ends in themselves. In the Byzantine approach, at least in the artistic sense, realism as perceived by the human eye was not a goal. Instead of depicting conventional reality, the aim of architectural representations was to allude to reality as part of a much broader intellectual construct, or to allude to meanings linked to the prevalent cultural view of the world. Representations, as written discourse, were essentially concerned with mind and content of memory. As a result, it was essential to establish different parameters and not the exact form of the building or its details and thus to rely exclusively on the intellectual process triggered in the mind of the perceiver.[32] This notion becomes understandable only if representations of architecture in Byzantine art are considered as "discourse."

Contemplation and meditation of the divine imbued all representations in Byzantine art, including representations of architecture. What mattered was the spiritual content of what was represented. According to the Seventh Ecumenical Council, in 787 (also known as the Second Council of Nicaea), a representation could be justified only if it could express the invisible reality that lies beyond the senses.[33]

The modes of representation could not but belong to the fundamental concepts of the society whose visual language was in use. This was feasible in terms of depicting architecture in art. The representation of an architectural idea and of its elaboration, however, remains an open question since research into this matter has not sufficiently advanced.

It seems that in Byzantium and in the medieval West, composite architectural drawings were a permanent concern. Orthogonal projections were known and used in combination with other projections such as an "unfolded" view, even as late as the end of the fifteenth century. By then, as attested by preserved architectural drawings from southern Europe, orthogonal projections were combined with at least one cross section or elevation as an analytical approach (fig. 12 a–c). Although few drawings from earlier eras have survived in Byzantium or in the West (one exception is the well-known ninth-century plan of the Saint Gall Monastery) and those that have lasted date from a later period,[34] there is no reason to conclude that a long-standing tradition of draftsmanship would have disappeared over time despite the lack of supporting physical evidence. The persistence of the method of "copying" (*mimēsis*) as an inseparable part of the creative process





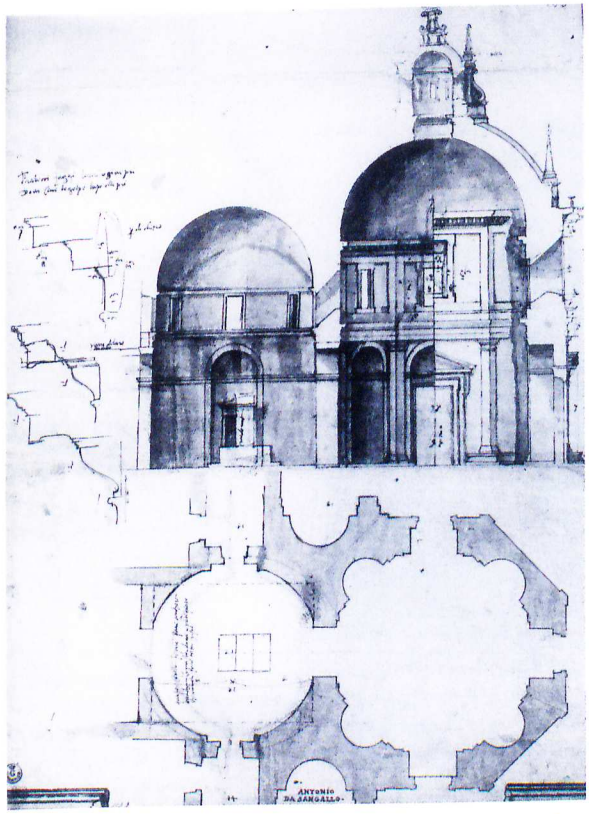


Figure 12a–c. Composite architectural drawings. (a) Plan of Milan Cathedral by Antonio di Vincenzo, 1390. (b) Plans and perspective sections by Giuliano da Sangallo, 1514. (c) Plan and section for the Church of Monte Moro, Montefiascone, by Antonio da Sangallo the Younger, 1526.

is evident in the eastern Christian world well into the nineteenth century.[35] Given that the practice of repetition or copying on various levels was the most significant factor in architecture and art, the making of representations for the purpose of recording an idea for a building seems to have remained a valid element that imbued all manifestations of creative architectural work.

The work of sixth-century architect Julian of Askalon, which influenced relevant legislation profoundly into the future,[36] suggests that by his time conditions were already in place for sophisticated architectural and urban design that required advanced drawing tools. Mathematics (arithmetic and geometry), harmony, along with drawing and construction were all fundamental aspects of Byzantine architecture.[37] Research in Byzantine metrology demonstrates that there was considerable development of practical applications of arithmetic, geometry, and geodesy,[38] which had remained in continuous use since Late Antiquity.[39]

The hypothesis articulated above regarding the existence and use of advanced drawing methods as part of the architectural design process is corroborated by the knowledge that such drawings and models were prepared in anticipation of the construction of the most celebrated of all Byzantine buildings, Justinian's Hagia Sophia in Constantinople.[40] But a sequence of major disasters throughout the long history of the Byzantine state, which led to the disappearance of centers of learning and libraries,[41] certainly helps explain, at least in part, why all traces of activity pertaining to the process of architectural creation fell into oblivion.

Yet, it is not only major disasters and calamities that are to blame for the loss of drawings; professional methods and practice were also responsible. Papyrus and parchment, very costly materials, could be—and were—used more than once for writing texts.[42] When there was no further need for a given text written on parchment, it would have been erased and the parchment reused. The same procedure must have been followed in connection with drawings. Successive erasing eventually wore out the material as older representations were removed. Similar practices were probably applied to other more-or-less perishable materials. The case of destruction of plans because of the reuse of the material infrastructure is a subject that has not been sufficiently examined.[43]

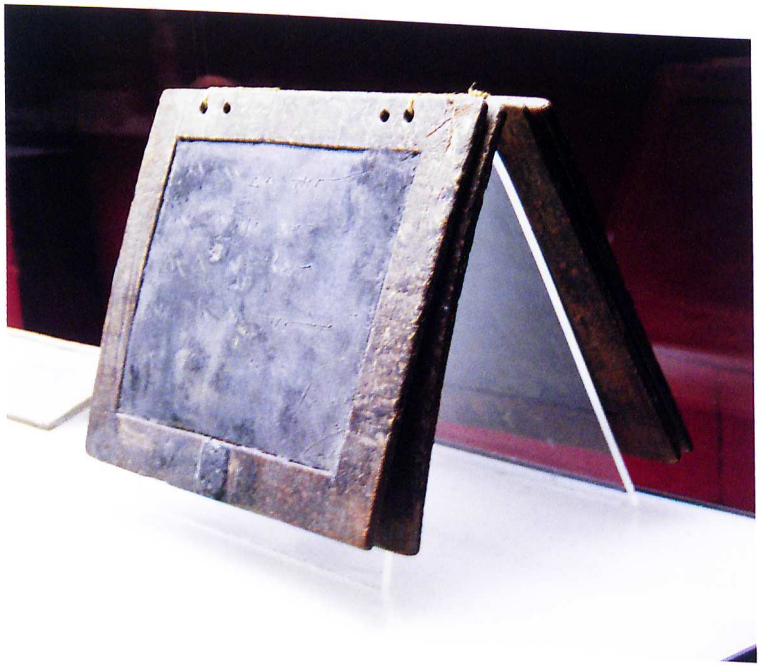


Figure 13. Wax tablet for writing. Römisches-Germanisches Museum, Cologne.

Cerography, also known as encaustic, was another widely employed technique in pictorial art compositions of the Early and Middle Byzantine periods, though it is not known whether it was also used for architectural drawings. There is, however, evidence of using the traditional method of wax spread on ivory, ceramic, or wooden planks (fig. 13)[44] and also of three-dimensional architectural models made of wax.[45] Certainly, such ephemeral writings and drawings would have had little chance of survival.

Limited knowledge, or, better said, hypothetical understanding of architectural drawing techniques is

based largely on our knowledge of Byzantine painting. Given the importance of the role of line in Byzantine painting,[46] it can be postulated that related principles must have been employed for architectural drawings as well. If we accept the premise that the best representation of a presentation is the presentation itself, we can understand the reason why all drawings responded to commonly accepted conventions. Portolan maps employed in cartography were particularly important for the development of visual representation. In the thirteenth century,[47] they aimed for practical utility and from the outset signaled a reversal of conventions hitherto followed relating to representation.[48]

Political factors, too, seems to have played a role in the disappearance of evidence for the tools of architectural creation. Descriptions or narratives related to heaven, the universe, or the divine sphere were frequently employed in architectural terms.[49] A person in possession of the necessary know-how for the creation and production of architectural forms (commonly attributed to God) posed potential problems that had to be skillfully manipulated by political and religious authorities. Within the ideological and political framework of the Byzantine and medieval worlds, the attribution of major achievements, such as the construction of magnificent buildings or other important technical works, was never attributed to ordinary human beings without running the risk of exaggerated adulation or superstition on the part of simple citizens. Controls governing such critical issues were required.[50] Such controls would have aimed at attributing major technical and technological achievements exclusively to political and religious authorities closely associated with God, and not to the knowledge and aptitude of a single individual or a group of individuals, artists, engineers, or technicians. This is most clearly reflected in the dearth of references to major architects as individuals and to their work, resulting, at times, in their complete deletion from the collective memory.[51] This lack of information in all likelihood brought about the exceptional introversion of the entire profession of master builders, technicians, and related craftsmen. It would be important to research this in greater depth and to record the destinies of creators of major architectural works in the collective memory, as attested by written sources in the period under examination.[52]

The importance of patrons and the nature of their role are related to this issue. Apart from financing projects, patrons in many cases not only had a say but also played an active role in the design process, even down to the smallest details.[53] In time, the notion of patron-architect gained ground—a phenomenon founded on socio-economic changes and one that emerged with the gradual establishment of feudal structures while the governing ideology promoted the notion of a direct link between patrons and the divine sphere as the main factor in the creation of architecture.

METAPHORS AND TRANSMISSIONS

Architectural representations are relatable to linguistic metaphors and, as such, are of particular importance.[54] Linking two polar points—a source and a target—they reveal similarities of objective material based on and invested in between the two poles. The very imprint of this process is expressed through representation. In this

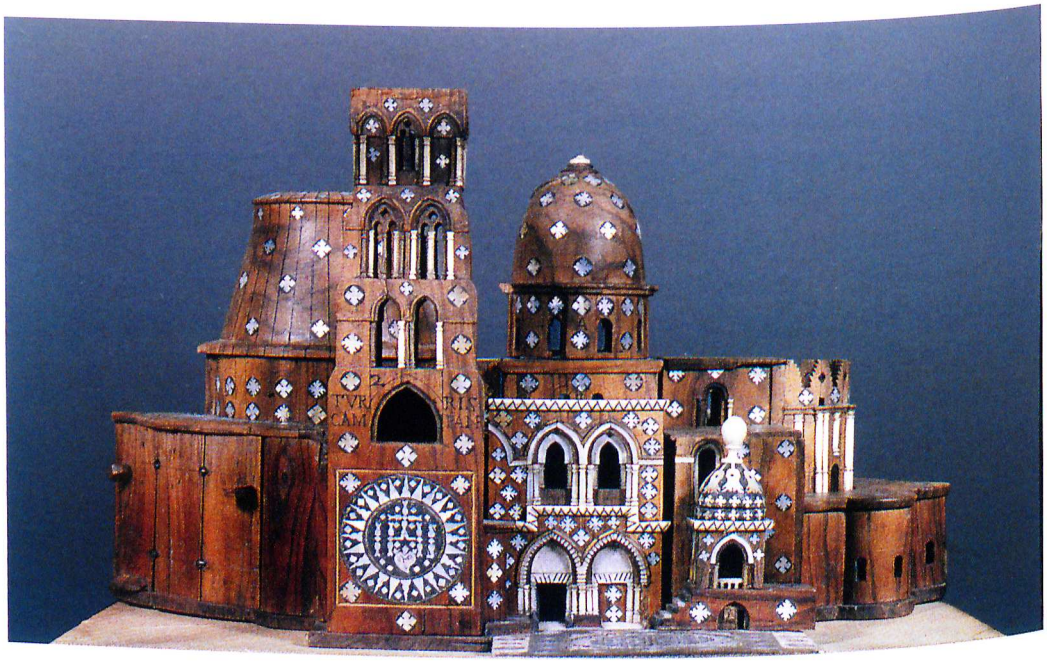


Figure 14. Model of the Church of the Holy Sepulchre, inlaid with mother-of-pearl decoration, probably 17th century, transported from the Holy Land. Museum A. Rublev, Moscow.

regard, I would like to touch upon some of the significant aspects of architectural representations.

A representation of architecture always carries a multitude of meanings. As part of the creative process, it can function as a vehicle for architectural thought preceding the implementation of actual construction.[55] It can also convey ideas, ideologies, and mentalities, and can transfer concepts both when implemented for design purposes and when depicting an actual construction and a more complex built environment. Architectural representations in Byzantium in themselves reflect the continuity of a tradition in the realm of idea expression, as it was shaped through centuries in the eastern Mediterranean and the Middle East during the ascendance of the Byzantine Empire.[56]

Metaphors and symbols employing architectural terms are found in written sources, particularly in the so-called *ekphraseis*.[57] The earthly and heavenly realms are symbolized by domes, vaults, and arches to the point that the symbolic view of the dome has contributed to the evolution of domed architecture and construction. Christian tradition regards church building as a sacred creation since it is implemented in imitation of God as the ultimate creator.[58] Church buildings and the very body of the faithful, both individually and collectively, are regarded as the "house of God" and, by extension, any construction constitutes a cosmogony, a dispensation of God's providence.[59] Furthermore, figures of saints and the faithful are symbolically understood as building blocks comprising the walls of a church that uphold the dome, the symbolic embodiment of heaven. This type of metaphoric symbolism is revealed in a late Russian icon showing the Miracle of the Blessed Alexander Svirskii (see cat. no. 61), where the construction of the main church of Belozersk Monastery has specific symbolic connotations.[60] Consequently, sacred architecture exemplifies the symbol of the world; it stands for all that makes the invisible nature of God visible, while its symbolic form was regarded as emanating from the divine will.[61] Thus, the use of the cruciform shape or, more broadly speaking, of two intersecting axes (longitudinal

and transversal), for church floor plans alludes to the Cross as the symbol of the redemption of all faithful in Christ's love and Passion.[62] At the same time, the design freedom implied by texts such as the treatise of Maximos the Confessor could potentially lead to a variety of architectural solutions.[63]

In addition, the metaphor has yet another dimension. Ideas, practices, and architectural drawings, through the agency of builders, traveled within the expansive multi-ethnic Byzantine Empire, facilitating their movement from the farthest-flung regions often toward the center—Constantinople—the veritable clearinghouse of creative thought. Thus, at least for the early Byzantine centuries, there does not seem to be sufficient evidence to make a clear-cut separation in concepts and practices between the East and the West in terms of the transfer of ideas and objects.

The proliferation of architectural ideas was implemented through oral accounts, as well as by transfer of drawings and models. Practices along the pilgrimage routes, which traversed the Mediterranean Sea and the Byzantine regions, played no small role in these matters. For example, various models of the Church of the Holy Sepulchre (fig. 14), transported from the Holy Land, were extremely popular and already present in the Early Christian era, while *representations* of this church were found on all sorts of objects, including coins.[64]

In contrast to what happened later in the West, the correlations between building concepts of harmony, style, and symmetry, on the one hand, and the proportions of the human body, on the other, were not incorporated into Byzantine architectural practice or thought.[65] But even in the West, it was not until the fifteenth century that Leon Battista Alberti correlated the three orders of magnitude of harmony of the universe (large, small, medium) with the three dimensions of a building (length, width, height). This correlation permitted the transition from human figures to the three dimensions of geometry and the transfer of the principles of the macrocosm to the microcosm (harmony of the universe in relation to harmony of a building) according to Neoplatonic precepts. Identification of a building with the human body also led to identification with the harmony of the universe. Given that the universe was understood as the creation of God, the transfer of this harmony to the building signaled a differentiated relationship with the divine.[66] But what happened at this time in Byzantium? Neoplatonic and Aristotelian frameworks of thought were both rooted in Byzantium. Theories of music, aesthetics, poetry, and rhetoric, ideas of harmony transfer from the aural to the visual realm, and the manner of achieving symmetry were well known. It appears, however, that no direct transfer of the concepts of harmony to architecture took place.[67] That appears to have been implemented in mathematics, but the matter has not yet been adequately explored.

Although Byzantine literature provides a theoretical basis for the transfer of concepts of the macrocosm (universe) to the microcosm (architecture), such a transfer does not seem to have been implemented. This appears to have been the reason why there was no possibility for the development of an explicit theory of architecture and of the means and modes of its representation. Representations of architecture in Byzantine art demonstrate an attitude of channeling the external world toward man, a world which when represented is never itself and which is never fully comprehensible

(a) (b) (c)

Figure 15a–c. Architectural decorative motifs with illusion of three-dimensionality. (a) The Great Mosque, Damascus, detail of façade. (b) Olympiotissa in Elasson, fresco detail. (c) Pantanassa in Mystra, fresco detail.

in any of its representations. Naturalistic and illusionistic (trompe l'oeil) representations would have been inconceivable in Byzantium, first, because they would have been regarded as false, and second, because of their perceived manner of distancing man from the fundamental truth that humans cannot fully comprehend the God-created world in its entirety. The third dimension in visual arts was known and used in Byzantium but, as demonstrated by many examples (fig. 15a–c), it is limited to the decorative.[68] The reasons for this choice have likewise not been adequately understood or explained.

COPIES

Judging from the multitude and meanings of imitations, it appears that the concept of a copy as representation was perhaps the one closest to the Byzantine mind-set. It is worth remembering that in Platonic thought, a representation is always the rendering of a depiction, and consequently it is, by definition, its imitation; imitation (*mimēsis*) is related to the representation of objects perceptible by the senses, and, as such, does not render the highest, but only a lesser, degree of reality.[69] Similarly, for the Byzantines—and in the Middle Ages, in general—the importance of the relationship between the original and the building is reinforced by the conviction that the transfer of just some characteristics, such as names, measurements, or proportions of the building being copied, in themselves sufficed to transfer the divine powers associated with the original building or church to its copy.[70] A copy, be it a portable object or an immovable work of architecture, was thus believed to possess the metaphysical powers of the original. For example, the transfer of select measurements sufficed for a

work of architecture to be regarded as a succinct representation of a presentation, a "replica," whereas "faithful copying" in the modern sense of the word was not practiced at all. A characteristic example is the church of Saint Boniface at Fulda, where only its transept was an exact copy of the corresponding feature of Old Saint Peter's basilica in Rome (fig. 16).[71]

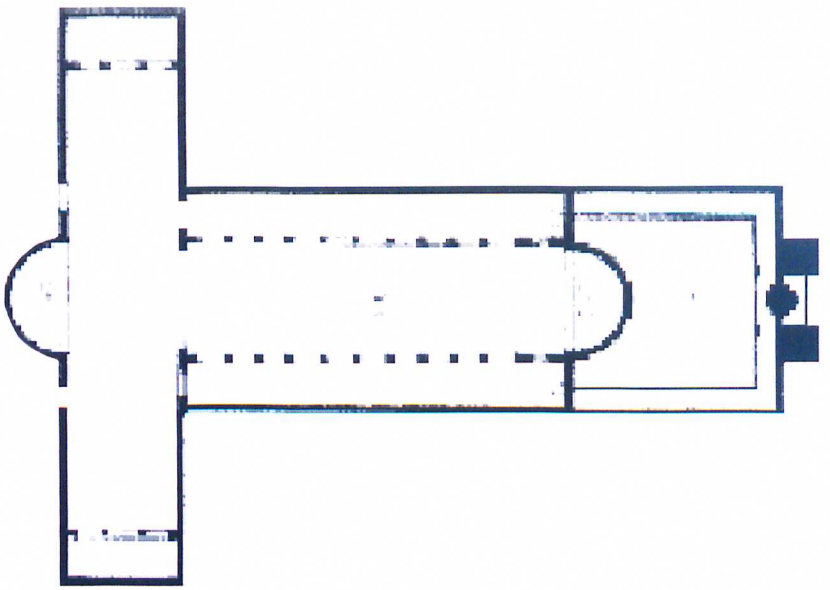


Figure 16. Saint Boniface at Fulda, plan, 9th century.

A number of surviving Byzantine monuments betray the existence of virtually identical floor plans. These include the churches of the Kathisma of the Virgin and the church on Mont Garizim in the Holy Land,[72] the Studios Monastery basilica and the Church of the Chalkoprateia, in Constantinople, as well as the churches of Attale in Euboia, Greece (fig. 17a, b).[73] The three pairs reveal remarkably similar floor plans although individual buildings at times relied on different construction methods. In addition, the influence of churches in Jerusalem, notably the Church of the Holy Sepulchre, was significant, especially in Western pilgrimage architecture, a subject of more extensive studies.[74] Both in the Early Christian era and in later times, pilgrimage practices helped to transfer experience and transmit ideas as parts of the ongoing architectural and artistic dialogue.

In representations of architecture, particularly church architecture in art, the concept of copying becomes even clearer. A church, as a *locus* and a space, was not simply a container of material relics; it was, above all, a symbol of divine presence. Consequently, depictions of monuments constituted not merely symbolic representations or iconographic allusions. Rather, they constituted concrete topographical invocations and the transfer of spirit, and thus, in the eyes of medieval beholders, they were understood as exact copies even though their actual relationship to the original

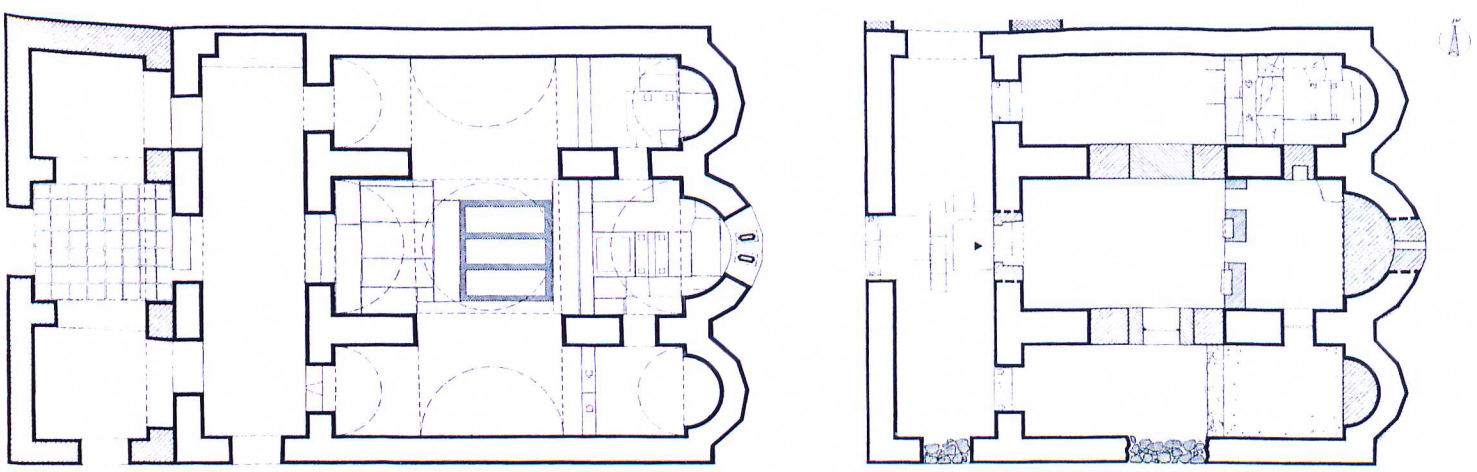


Figure 17a, b. Church of Attale, Euboia, Greece. (a) Plan of the original church. (b) Plan of the modern church.

building may have been minimal.[75] In medieval works of art, it sufficed to render some characteristic elements of form to achieve the desired effect. As we have seen, the same was true for representations of architecture in art.

The particular symbolism of architecture played an important role in the selection of characteristics to be depicted. An example that clearly conveys selective perception and the importance of the latitude for imagination and personal interpretation is that of Theophanes the Greek, a renowned Byzantine artist and philosopher (1335–1409), who illustrated books and created pictorial programs for churches in Constantinople and elsewhere, especially in Moscow, where he was commissioned to decorate the royal palace.[76] When a friend of his, Epiphanios the Wise, asked him to draw the architectural complex of Hagia Sophia in Constantinople, Theophanes replied that it was impossible and agreed to sketch only a miniscule part, on the basis of which Epiphanios could "represent all the rest through his mind and imagination." Thus, the artist created a sort of synoptic view, open to personal imagination. Epiphanios used Theophanes' sketch four times in his book and later, as he himself states. The sketch, we are told, was also used by many contemporary Muscovite artists and authors.[77]

THE THOUGHT BEHIND THE IMAGE

An architect carries in his mind a representation of the form of the building he wishes to construct. This ideal representation is three-dimensional[78] or even multidimensional, and contains his ideas with regard to the exterior form as well as the interior space, a method of visualization of architecture to which Byzantines paid particular attention.[79] In the Byzantine church, symbolically conceived of as a "container of the uncontainable," emphasis was placed on interior space as the principal expression of architecture as a vehicle for ideas.[80]

In that context, drawings of all possible types (floor plan, section, elevation, perspective) are geometrical representations of space, while through a variety of scales they establish a practical discourse.[81] At the same time, they constitute an intellectual tool for the study and organization of ideas, which pre-exist in an architect's mind long before any attempt at construction.[82] What would have been the use of these representations during the early stages of the design process, where, in modern terms, nothing can be definitive? The intellectual process in this case involves transferring building ideas from the mind not to the written word but to a drawing. As a concept, drawing (a type of written discourse) had been known since Classical antiquity, as demonstrated by Euclidian geometry and Ptolemaic geography. The issue relates not only to the representation as an image of reality and as an imitation, but also to the reality of the image itself.[83] Yet, images rendered by intellectual tools, and the intellectual tools as images in themselves, bear a likeness of a special kind not only to material, but also to spiritual, reality.[84] The very transition, however, which transubstantiates the intellectual image in a creative act and construction, has not yet been explored in the context of the Byzantine world.[85]

The artistic approach to space as demonstrated primarily in pictorial compositions in the Christian East, where Byzantines display their interest not in imitating nature

but in imitating the archetypal absolute beauty (κάλλος) of God, probably influenced the approach to drawing taken by architects and others invited to create architecture or render it visually.[86] During the early phases of drawing, what concerns us is not the definition of architectural solutions but the record of an idea that imbues the solution and guides it to the most appropriate *topoi* (sing.: *topos*). In Byzantine visual representations of completed buildings, there is, so to speak, a regression as a process retracing these *topoi*, which are then depicted as the essence of the completed building.

However, since for the Byzantine mind every space could be both "real" and "supra-real," every point in space was a kind of synthesis of inherently incompatible levels of space. Thus, we can imagine that in matters of the design process, "the makers of architecture"[87] seem to have been in a position to use both linear perspective, known since earlier times, and the so-called inverted perspective as an opening up of the subjective gaze toward space. Given that Greek tradition and expertise in solving complex problems of projection belonged to a "familiar past," the question is to what degree the Byzantines had assimilated these achievements and ways of producing drawings using projection methods. That important question remains open.

In addition, there are many terms in Byzantine Greek and Latin dictionaries related to drawing, such as *opsis*, *opsopoiētikē technē*, *skiagraphia*, and *skariphos* (Greek); and *opsopoios*, *schēma*, *skēnographia*, and *orthographia* (Latin). Oreopoulos has observed that dictionaries lack a single word for a conceptual system that denotes the existence of a point of view or theory regarding architectural drawings, despite the fact that a cognitive framework which would have permitted its development was unquestionably in place.[88] He also asks what could have been the element that enabled the overcoming of epistemological obstacles and shaping a theory of drawing in the West but not in Byzantium, despite shared cultural prerequisites at the level of discourse.

The delimitation between Byzantine practice of architectural design and of depicting architecture in pictorial compositions seems to be a particularly difficult task. The question is related, among other things, to the cognitive and spiritual infrastructure of the draftsman. Written sources and pictorial imitations of construction techniques found on building façades (fig. 18) suggest these two crucial questions: to what extent may an artist also have been an architect or vice versa, and what was the significance of this dual role—if and when it existed? While the evidence of an important inscription on the west wall of the narthex of Bogorodica Ljeviška at Prizren, where artist and architect are mentioned as working in unison, is open to interpretation,[89] the cases of Buschetto, the Greek architect of Pisa Cathedral (11th century), Giotto (14th century), Brunelleschi (15th century), the unknown architect of Gračanica (early 14th century), and the artist-architect Michael Proeleuses in Thessaloniki (early 14th century)[90] show that under certain social conditions the identification of the two roles was indeed possible. This matter has hitherto not been explored systematically. At the same time, examples of churches with identical floor plans but differing architectural implementations and techniques betray the phenomenon of disseminations of drawings for use and implementation often in contexts very different from those in which they were created.[91]

Figure 18. Painted façade of a Byzantine church, Ljubostinja Monastery, Serbia, 1386.

Scholarly and related literature, in a somewhat facile manner, has embraced the view that architectural plans were not used in the Middle Ages. It is precisely on this view that the theory of "orality" in architecture rests as the exclusive approach to architectural design not only in Byzantium but also during the Middle Ages in the West. The prevailing view holds that communication was carried out orally between patron and architect and between architect and master builders. The publications dealing with representations of Byzantine architecture reveal a frame of mind within which they were written, stressing the significance of the absence of theoretical architectural discourse that is particularly interesting.[92] The lack of a formulated theoretical architectural discourse has been attributed to an "anticlassical" frame of mind, which is thought to define the way hierarchical relationships in Byzantium functioned—between the heavenly (superior) and the earthly (inferior) realms—in shaping an aesthetic framework for architecture.[93] The same reasons have been given for a supposed cognitive inertia that kept the building craft (*tektonikê*) at a level of practical work, preventing it from becoming an intellectual pursuit. These perceptions cloud our knowledge regarding the use of drawings in architecture and building practice. The already mentioned scholarly views insisting that Byzantine architecture did not result from a design process and that there was no reliance on drawings as working tools overlook two important points.[94] The first is the existence of churches with identical floor plans at different locations; this fact strongly argues in favor of drawings having been used for the construction of multiple buildings.[95] The second is the very complexity of the buildings themselves, particularly large public buildings, the construction of which would have required a significant amount of planning and would have been impossible without the initial recording and elaboration of the architectural idea in various details. The existence of precisely such tools is explicitly mentioned by Prokopios, who refers to engineering as "wisdom," thus recognizing its

intellectual significance while clearly describing the preparation of a model and drawings for the construction of Hagia Sophia:

> *Justinian built not long afterwards a church so finely shaped . . . shewing them some sort of* model of the building *we now see, it seems to me that they would have prayed that they might see their church destroyed forthwith, in order that the building might be converted into its present form. . . . And Anthemius of Tralles, the most learned man in the skilled craft* [σοφία, wisdom] *which is known as the art of building* [μηχανικὴ, engineering] . . . *ministered to the Emperor's enthusiasm, duly regulating the tasks of the various artisans and* preparing in advance designs [ινδάλματα, drawings] *of the future construction* [emphasis added].[96]

Mark the Deacon in the *Life of Porphyry* referred to a similar event which involved the metropolitan bishop of Gaza (402–7).[97] Following the burning down of the pagan Marneion and the expressed need for building a church, the Christian community could not agree on its form. At that point, a letter from Empress Eudoxia to the bishop of Gaza was received containing a plan of the church in the form of a cross. The church had to be built according to this plan, which was presented to the Christian community as the will of God. The famous architect Roufinos marked the outline of the church on the site according to the received plan and was also responsible for the church's construction.

Literary texts on architecture (*ekphraseis*), which illustrate the interest this craft commanded and the importance attached to it on many levels, contradict the perception that the building craft (*tektonikê*) lagged behind developments in other disciplines.[98] In addition, there was an oral discourse, along with various other systems for the elaboration of drawings of buildings, hinted at by evident reliance on harmonic proportions.[99] The work of an engineer, knowledgeable in arithmetic and geometry, was presumably expressed through construction drawings (*skaripha, indalmata*) and wax models. But if one accepts the view that chance was the prevailing "system," the possibility that exceptional precision in construction may have gradually declined following Middle Byzantine times would have to be attributed to philosophical attitudes, along with practical, political, and economic factors.[100]

As has already been noted, few drawings have survived from medieval times in the West and still fewer in the Byzantine sphere, which suffered greatly as a result of successive historical disasters. Despite the superficial and unclear picture provided by the paucity of evidence from Byzantium, extant building regulations[101] point to the existence of a very sophisticated system that would have required professional use of representations[102] that belonged to the very process of implementation.

Written sources, such as the work of Vitruvius, as well as the much later drawings of monasteries in the West that belonged to newly established monastic orders, or others such as those by Villard de Honnecourt (13th century), which survive in a kind of sketchbook (fig. 19a–c),[103] demonstrate that "orality" was not the exclusive method of communication. The drawings of Villard de Honnecourt themselves demonstrate that he was not the first builder ever to make drawings. In line with the mind-set of

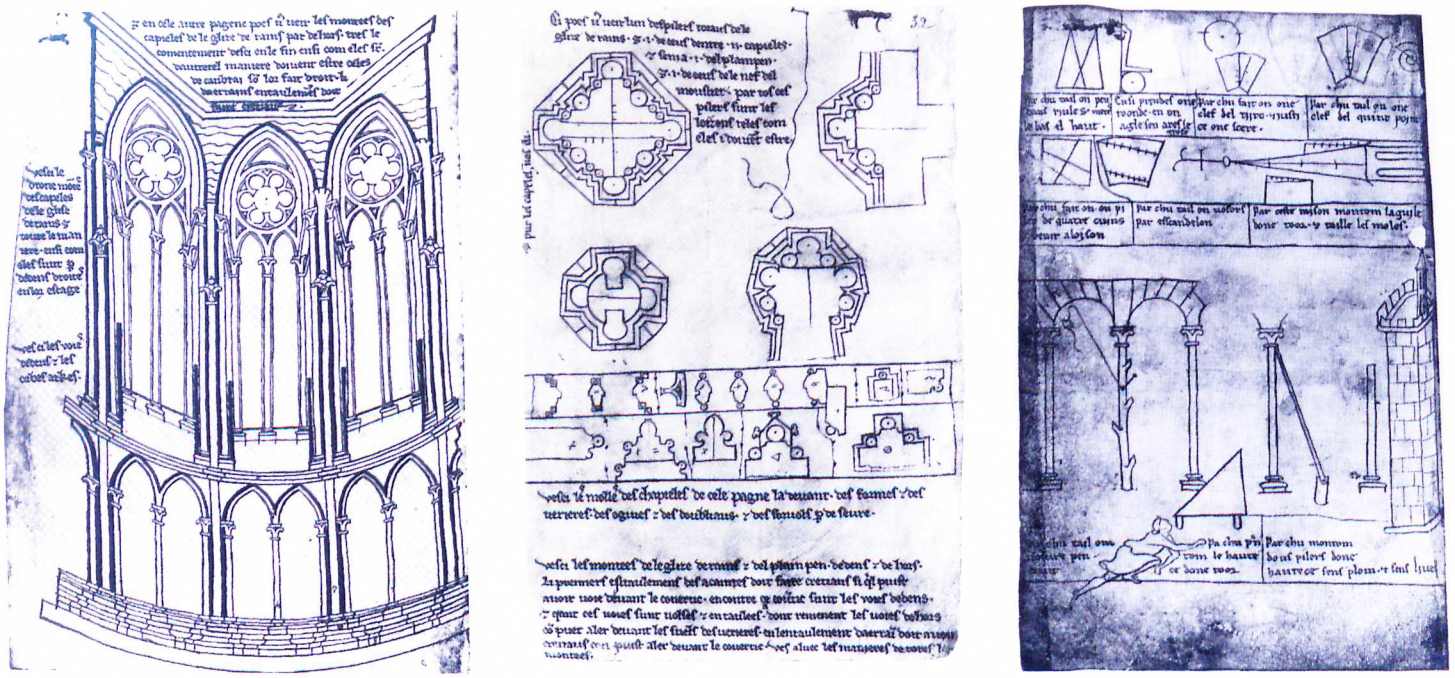


Figure 19a–c. Three drawings by Villard de Honnecourt, 13th century. Bibliothèque Nationale, Paris (B.N. 19093). (a) Reims Cathedral, elevation. (b) Reims Cathedral, pier sections and molding templates. (c) Methods of measurement and construction.

the times, creation in many fields relied on repetition and emulation, and these drawings are expressions of a tradition that went well back in time and was geographically quite widespread.

In fifteenth-century Western Europe, Leon Battista Alberti recorded a view that had deep roots that cannot be examined apart from a long-standing tradition shared by the West and Byzantium:

> *The presentation of models that have been coloured and lewdly dressed with the allurement of painting is the mark of no architect intent on conveying the facts; rather it is that of a conceited one, striving to attract and seduce the eye of the beholder, and to divert his attention from a proper examination of the parts to be considered, toward admiration of himself. Better then that the models are not accurately finished. . . . But plain and simple, so that they demonstrate the ingenuity of him who conceived the idea, and not the skill of the one who fabricated the model.*

He continues, recalling the position of Theophanes the Greek (mentioned earlier):

> *The difference between the drawing of the painter and those of the architect is this: the first takes pains to emphasize the relief of objects in paintings with shading and diminishing lines and angles; the architect rejects shading but takes his projections from the ground plan and, without altering the lines and by maintaining the true angles, reveals the extent and shape of its elevation and side—he is one who desires his work to be judged not by deceptive appearances but according to certain calculated standards.*[104]

Alberti, a high ranking jurist and later official of the Catholic Church, had no training in architecture.[105] Yet, he argued empirically that perspective was a matter for artists and that architects ought to draw their plans orthogonally so that one could *take measurements* from them. Alberti's position is of great significance as an indication of what was really happening at the time of his writing. It also reflects the professional, cultural, and social profile of the author, who proposed rules that were an immediate link to Byzantine concepts and had direct bearing on architectural practice.

Texts and drawings from Alberti's time reveal that drawing analysis and its representation were something of a preoccupation for those involved in construction. These individuals manifestly attempted to analyze and to include *on a single sheet* more than a single drawing, thus including floor plans, elevations, sections, sketches, and details. We note an attempt to analyze the drawing so as to parcel the notion of the Whole, which had previously been the established approach. Cognitive synthesis and the perception of the Whole, which in the early Middle Ages had been something of a novelty, here met with analytical thought.[106] Examination of the individual elements that comprise the Whole thus assumes special importance in this context.

Representations of surviving buildings have always responded to new scientific discoveries and technologies that influenced contemporary thinking and expression.[107] It is important, therefore, to examine to what extent the thinking of a Byzantine architect was influenced by the introduction of paper in the fourteenth century.[108] It is thought that before that time, discussion of ideas made no use of sketches and visual material in the quest for solutions.[109] As mentioned earlier, the difficulty in producing papyrus and parchment made their use for daily needs very costly. Yet, Villard de Honnecourt's architectural and engineering drawings[110] constitute an example, and certainly not the only one in early-thirteenth-century Europe. His idea of collecting annotated drawings in a corpus suggests that craftsmen and public alike were familiar with this means of transferring knowledge and ideas. This is further corroborated by the view that some of his drawings were copies of drawings made by other architects and related workshops.[111] The question modern scholars pose relates to the use of the original drawings copied by Villard de Honnecourt, given that they were not made to scale and were drawn on parchment, a material susceptible to dilation. Moreover, the question remains why the architects who had produced the original drawings would have allowed a colleague to copy their originals at a smaller scale.

Yet, the falling into oblivion of a tradition and of acquired knowledge is invariably a slow process. A recently published drawing from the first half of the nineteenth century (fig. 20) shows this clearly.[112] The drawing is of a small, low-cost,

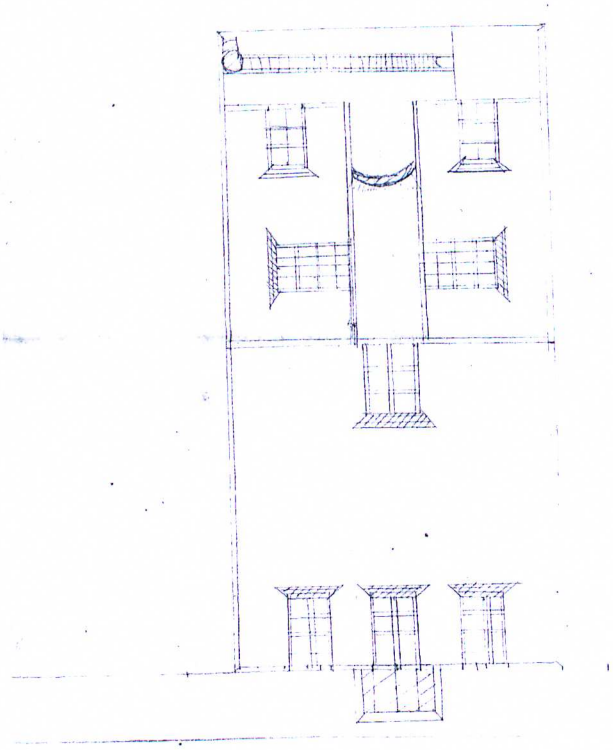


Figure 20. Drawing of a house from the first half of the 19th century, Athens.

two-storied house made in Athens at a time when the prevalent architectural language was that of academic classicism influenced by European education. The drawing is important for a number of reasons. On the one hand, it is clearly linked to medieval drawing style and concepts of space with a composite architectural representation relying on modes and codes unknown to the modern beholder. On the other hand, it collects the information related to elements essential for a contract, such as the number of basic openings, the stairs, the number of rooms in front and in back, above and below, and the idea of the quadrangular overall form. It does not simply constitute part of an alleged "continuing oral tradition of the kind that for centuries underpinned the craft of building without the aid of analytical drawings,"[113] but contains in itself evidence of construction experience that would otherwise have to be expressed in words and signs. Its implicit level of understanding relies on the concept of time.

This drawing may be viewed as a testimony of survival, for at the time it was made, Renaissance viewpoints that had developed dynamically and had become widespread in fact coexisted with traditional approaches over a long period of time. It is simultaneously a testimony of the continuation of views found not only within the heritage of the Byzantine Empire but also in the medieval West, during a period when the concept of the Whole had been linked to analytical thought for quite some time.

It is interesting that the concept embodied in such drawings became associated with folk artists who could not follow the course traveled by advanced architectural thought in Central and Western Europe, and who combined a familiar tradition with contemporary elements. However, the larger question of facing and approaching religious space as a "container of the uncontainable" and of the contradictory tendency to "efface" architecture in favor of space remains to be explored.

SCALE, PROPORTIONS, AND TECHNOLOGICAL BACKGROUND

The significance of scale has been known since antiquity, as evidenced by extant drawings and models. Given that a representation is understood as an analog notion, its scale expresses an analogous cognitive process. Extant drawings of buildings confirm that scale was known and used, although written references to it appear only much later. Modern architectural theory advocates that the use of scale drawings signals the emancipation of drawing as a professional tool par excellence. Still, even though there were such drawings in antiquity and in the Middle Ages, the hypothesis that scaled architectural drawing was an autonomous craft has yet to be confirmed.[114]

At the same time, it is certain that the scale of representations of architecture in art did not follow any conventional realistic scale but was based on the relative importance and position of a depicted building within a wider framework. Scale and size were not necessarily related to real proportions either; they, too, were subordinated to the expression of the meaning of the Whole. Scale, therefore, was not substantive and was related to other values and hierarchies.

Scale and drawing of a representation were related to all the elements that make up a theory of architecture, a theory that allegedly did not exist in Byzantium.[115] If, however, this prevailing view corresponded to reality, a series of issues and developments

would have to be explained. This, in turn, would demonstrate that a theory of architecture, in fact, did exist, and it would also highlight the existence of major developments in the technical sciences.

It seems that in copies of drawings without use of a scale, proportions were nevertheless adhered to. Proportional diminution implies that the draftsman had some knowledge and a clear intuitive sense of scale. A modern scholar laboring within the dominant framework of Renaissance thought may be in a position to understand the earlier tradition to a certain degree but may not necessarily be able to understand its full significance and spectrum. Therefore he or she may be unable to perceive the significance of drawings that do not conform to modern standards. Such drawings are those which do not have a scale ratio but rely on representations adhering to proportional rules. The development of the "conventions" used in such drawings is considered to have occurred in the late twelfth to the early thirteenth century. It was during the twelfth century, nevertheless, that the so-called Gül Camii (ca. 1100), the churches of the Pantokrator Monastery (1118–36), and the church of Kyriotissa (Kalenderhane) (1195) were being built in Constantinople, as well as the royal palace of Zisa (1166–75) in Palermo, Sicily, an innovative structure based on Byzantine building tradition with elements of Arab influence.[116] The early-fourteenth-century Serbian church at Gračanica Monastery in the region of Kosovo reveals a highly attenuated interior resulting from a skillful juxtaposition of certain vertical elements made also externally visible in a manner different from, though typologically related to, Byzantine prototypes. The solution was undoubtedly the result of a thorough use of drawings whereby a proportional relationship between the main dome and the minor ones was brought into a harmonious balance (fig. 21).[117] The complexity and refinement of such buildings would make their construction impossible without design studies including representation of their various components. Oral transfer of information did play a role, as in any project of such dimensions and requirements, but it would not have sufficed by itself.[118] This tradition, which incorporated Hellenistic and Roman experience, along with construction regulations from the Byzantine realm, reflects sophisticated design procedures, the demands of which, in turn, required at least a basic level of drawing competence and methodological skill.

Figure 21. View of the church of Gračanica Monastery, Serbia, early 14th century.

This is highlighted also in reference to the replacement of a pier by a column (*περὶ ἐναλλαγῆς πινσοῦ καὶ κίονος*), included in Julian's legislation.[119] It can be expressed as a mathematical formula for static adequacy, since it dictates the minimal safety proportions in the case of adaptation of a building. The reference reads as follows:

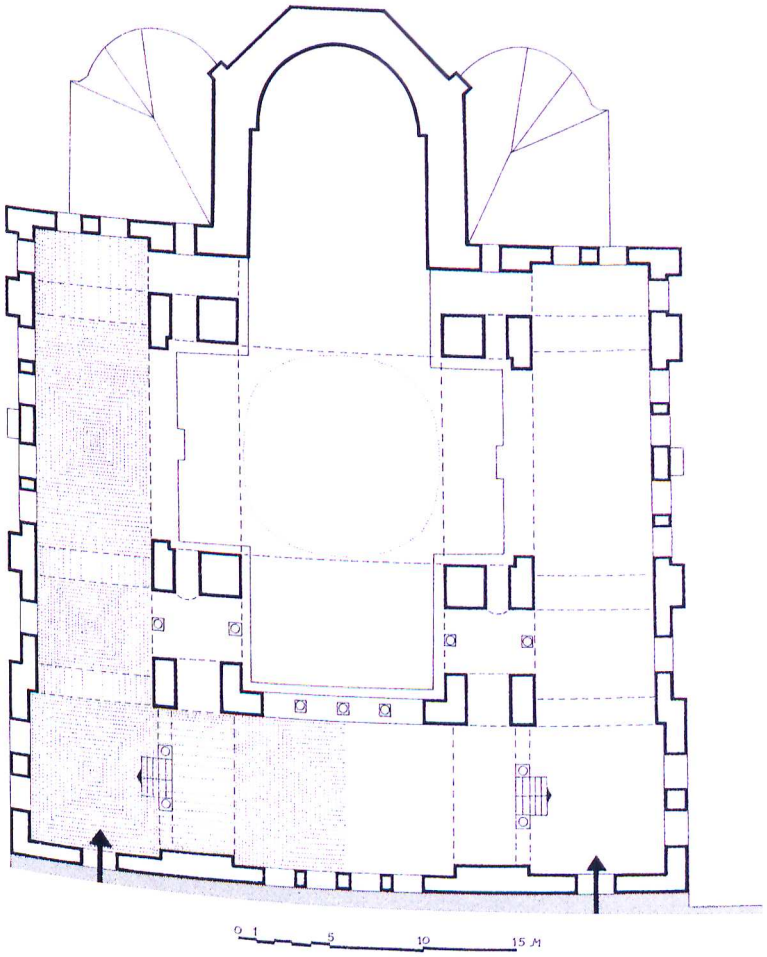
With Regard to the Substitution of a Pier by a Column

If the pier stands at the lower portion and bears the weight of the upper portion and if the desire is expressed to replace it with a column, this can be done and the pier can be replaced by a column, the diameter of which shall have half the width of the pier that has been removed. Correspondingly, if the pier has a length of two feet, then the diameter of the column which replaces it shall have the measure of one foot. If, on the other hand, the pier is on the upper portion and the desire is expressed to replace it with a column, this can be done on condition that a girt be placed round the column no smaller than eight fingers thick. This work is then judged to be safe.[120]

This text makes clear that Byzantine builders and engineers came to know that maintaining a ratio (proportions) enabled them to reduce the volume of perpendicular load-bearing elements by replacing voluminous piers with an analytical synthesis of columns much smaller in diameter, and thus were led to an architecture of highly attenuated supporting members linked by arches and small vaults (fig. 22a, b). This static elaboration, displayed in several extant monuments,[121] presupposes the knowledge of mathematics and of the theory of projections. Such theoretical achievements, successfully translated into an act (*praxis*), are extremely important and confirm the competence and knowledge of engineers and builders. The implementation of these well-understood and extremely important static solutions indicates the existence of a system of applied knowledge with control options on many levels.[122]

Specialized manuals, such as the treatise on geometry in verse by Michael Psellos (11th century),[123] contain numerous theoretical texts on metrology, while cases recorded by fourteenth-century notaries show that topographers, inventory takers, and special subordinates of the chancery (*asēkrētes*) must all have had extensive and thorough theoretical knowledge.[124] It is impossible to imagine that this knowledge originated in simple mechanical practice of average manual laborers. A Byzantine *praktikon* in its full version contained, apart from a list of inhabitants and fiscal information, a text with detailed topographical information, including measurements and distances using terminology that alluded to mathematical elements according to the four cardinal points.[125]

In the early-fourteenth-century topographical register tables, based on a census of 1300/1301, two metrological principles stand out.[126] Triangulation seems to have been implemented empirically between 1301 and 1321. Especially in the 1321 census, land parcels were recorded with two different calculations of their area, the so-called *kata to ologyron* (according to the perimeter) and the *kata kephalē kai poda* (according to head and feet).[127] This development in field implementation would have been inconceivable, especially for the *kata to ologyron* calculation, without prior detailed theoretical study.[128] Furthermore, the undeniable reliance of Byzantines on metrology was, in contrast to modern criteria, always *qualitative* and never quantitative ("real"). Thus, for instance, the rope used for measuring private land was different from that used for measuring land from imperial bequests.[129] The ramifications are obvious.



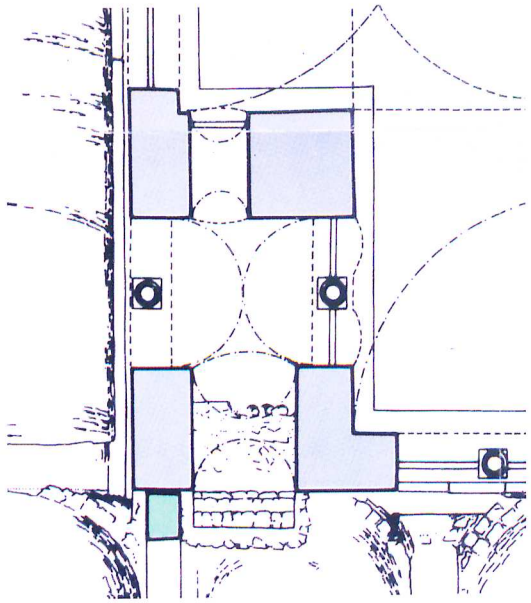


Figure 22a, b. Hagia Sophia, Thessaloniki, 8th century. Replacement of voluminous piers by a combination of smaller columns, or smaller columns and piers. (a) Plan of the church. (b) Detail of plan.

It is interesting to note the existence of manuals that were not simply of a practical nature but rested on a theoretical framework. An important manual of this kind is attested in the Komnenian era[130] and includes a mathematical definition of the "root of unity" (*riza choriou*) as the method of estimation of land parcels. The question of Byzantine writings concerning construction and architecture in general is very broad and requires further research so that numerous related topics may be adequately explored.

Finally, in considering various aspects of architectural practice in Byzantium, we should note that architectural or topographical drawings were probably systematically destroyed as expendable once the strength of the parchment on which they were made did not allow further use. The fate of drawings on wax could hardly have been different. Ultimately, the disappearance of drawings is probably related also to the relationship between creators and centers of power, and the control these centers exercised, since the possibility of field measurements and its significance as human achievements would have been tolerated only under specifically controlled conditions. It seems, therefore, that Byzantine architectural design, as implied above, should be examined at least from the points of view of mathematics, harmony, and geometry.

MODELS

An architect as creator cannot work directly on a real site; he is obliged to work on a substitute, so as to give form to the site. Actually, from the beginning of formulating his idea, he is mentally involved with a substitute.[131] Significant differentiations in architectural thought, and correspondingly in philosophical and scientific thought, are not so much related to problems posed or solutions provided, but rather to the creator's manner of thinking within the framework of his era. The factors that define the model are none other than the way these questions are posed: the standpoint from which one views things; the patterns of thought during a specific period; the methodologies; an individual's attitude toward the world and the way he/she interprets it. The above factors define the model as an idea and a method of study, but they also define the resulting architecture. Models are not always directly related to reality and frequently do not have immediate physical application. The elements of which they are comprised need not be fully realistic, but the model's structure and its internal framework, as metaphorical expressions, can correspond to a reality on the basis of general rules.[132] Representations, symbols, drawings, and models are not interpreted on the basis of their physical reality but on the basis of structural characteristics of the prototype to which they belong. Thus, a basilica or a domed building can be rendered in an entirely abstract way with allusions to architecture, but also as a concrete proposal facilitating its construction.

The question of the use of models as well as drawings in Byzantium and the medieval world is yet another aspect of architectural activity marked by a lack of adequate evidence and research. To approach this question, we may profitably turn to the work of Lothar Haselberger,[133] who provides invaluable information and methodological approaches to architectural drawing in the Classical world, especially during the Roman era. Particularly helpful as a bibliographical tool on Byzantine use of models are the recently published proceedings of the seminar on architectural models in the Early Christian, Byzantine, and Late Byzantine periods.[134]

In the area of the eastern Mediterranean, models as representations of architecture have a long history that can be traced to Neolithic times.[135] Yet, certain scholars have doubted whether architects in Classical and Hellenistic times made use of architectural models while others have argued that they did.[136] The former consider that the degree of standardization of buildings and the minimal degree of intervention in details rendered models superfluous. Yet, the question is still open with regard to the so-called *paradigm*, a small-scale model for the study of specific structural elements.[137] The temple of Apollo at Didyma in Asia Minor constitutes a fine Hellenistic example of architectural thought that included drawings and construction of models; it is mentioned by Vitruvius and therefore reflects an architectural practice before his time.

It is useful to recall two types of models as representations that have survived to this day: (a) the model itself as a physical three-dimensional object and (b) the depiction of a model as a representation of a representation. The significance of both is great as they suggest not only the perception of a building but also the role of the person implementing the architectural creation. A number of questions, however, arise in the latter case as to the real object of a representation.

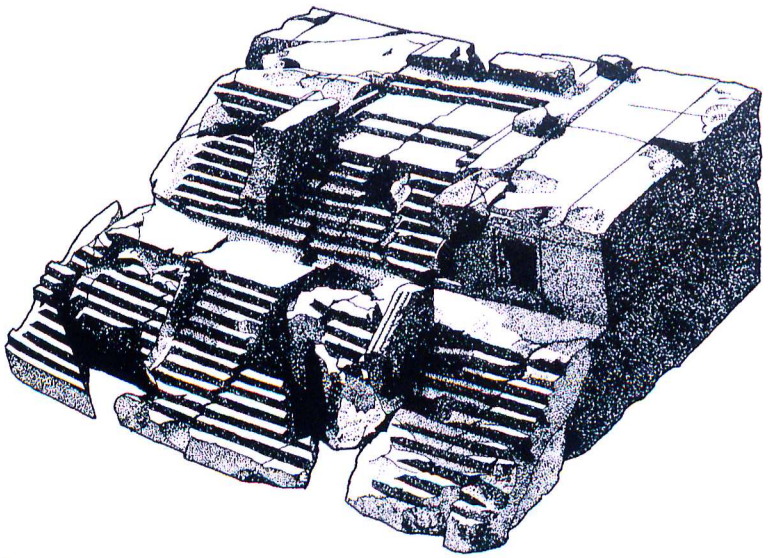


Figure 23. Scale model of podium and stairs of the Roman temple at Niha, in the Bekaa Valley, Lebanon, 1st–2d centuries A.D. Stone.

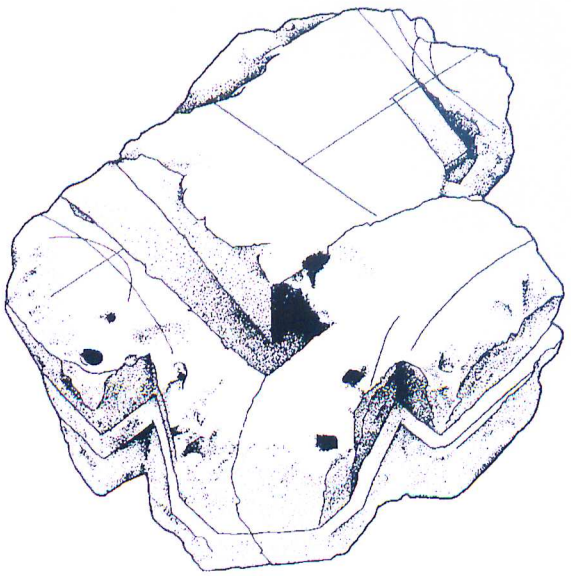


Figure 24. Fragment of a scale model of the great temple at Baalbek, Lebanon, 2d century A.D. Stone.

Very few extant models as three-dimensional objects seem to have played a direct role in the process of the evolution of an architectural project. Notable among them is a 1:24 scale stone model, made of assembled components, representing the Roman temple at Niha, in the Bekaa Valley, Lebanon (fig. 23).[138] Quite probably, this model was directly related to the process of building the temple in question. It preserves invaluable metrological elements, which suggest the use of models in this process and their usefulness for patrons and donors.[139] A similar case is that of a fragment of a 1:30 scale stone model of the great temple at Baalbek (fig. 24). Because of its structural complexity, this temple could not have been constructed without making use of more than a single model. The surviving fragment constitutes part of a set of communication tools as an indispensable means of exploring the final "product." The examples from Niha and Baalbek appear to be components of a study process of an idea from its beginnings toward its full implementation in the building itself. These models, therefore, can also be thought of as tools for the transfer of ideas.[140]

No comparable finds survive from Byzantium. What have survived are textual references indicating that Byzantine architects did actually use models as part of their process. Thus, Gregory of Nyssa writes:

> *Look at the engineers of all these grand and sublime buildings, and how they* pre-create the likenesses of form and type on a little bit of wax. . . . *Even a small figure has the same power as many and big constructions* [emphasis added].[141]

Echoes of these lines appear in ideas about models articulated by Alberti many centuries later. Gregory of Nyssa is referring to three-dimensional construction models in wax, possibly reinforced by a wood frame. Their existence suggests the

Figure 25. Pompeian fresco depicting a model being transported for display, 1st century A.D. House of the Carpenters, Pompeii.

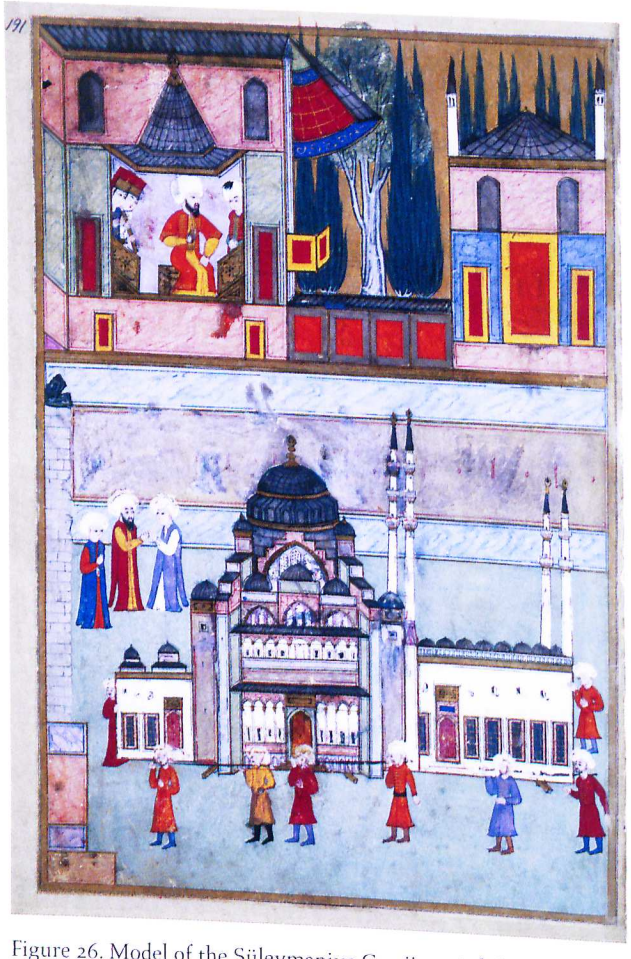


Figure 26. Model of the Süleymaniye Camii carried through Istanbul by master builders and members of the masons' guild in a parade in 1582 for presentation to the sultan. Manuscript, perhaps painted by Nakas Osman. Topkapi Museum, Istanbul.

possibility of other three-dimensional representations, not only of buildings but also of other constructions.[142] There are, however, other remarkable examples of models which raise questions as to their form and origin, such as the model of Hagia Sophia in Constantinople, also known from textual evidence. Referred to by Prokopios, that model was displayed after the destruction of the first edifice to convince the populace of the beauty of the planned new church building.[143]

Two other comparable models, separated by centuries and recorded on paintings, are also of considerable relevance. The first of these is a fresco in Pompeii depicting a model being transported for display (fig. 25). The second is a sixteenth-century manuscript illumination showing a gigantic model in wood and ivory of the Süleymaniye Mosque. The illumination depicts the model being carried by master builders and members of the masons' guild in a 1582 parade through Istanbul to be presented to the sultan (fig. 26).[144] This Ottoman practice may reflect earlier Byzantine practice of public displays of important works of architecture, as described by Prokopios in reference to Justinian displaying a model of Hagia Sophia. The question furthermore arises whether the work of Sinan, the architect responsible for repairing Hagia Sophia and for the design and construction of its Ottoman counterpart, the Süleymaniye Mosque, reveals not only his knowledge of Byzantine monuments, but also perhaps of Prokopios's work.

A series of known models constitutes evidence of remarkable continuity through time in the preferences of different eras. Included is this series are a model of Hadrian's aqueduct, which probably originated in Merida (Spain),[145] and a ninth-century stone reliquary from Seleuceia in Asia Minor, which depicts a small-scale model of a cross-in-square church type.[146] There is also a remarkable twelfth-century stone model of a domed church from Cherven in Bulgaria (fig. 27).[147] In addition, a large number of models of the Holy Sepulchre survive in diverse materials made for various purposes,[148] such as the well-known fifth- or sixth-century model of the Holy Sepulchre from Narbonne.[149] Interesting in this category, too, is an *artophorion* from Aachen Cathedral (fig. 28), which represents the dome of the Holy Sepulchre and dates from the last third of the tenth century.[150] The assembled wood models of the Holy Sepulchre inlaid with mother-of-pearl decoration, most of them probably dating from the seventeenth century (see fig. 14), seem to have been quite popular.[151] A model of the Church of the Nativity in Bethlehem, presently in the British Museum, also belongs to

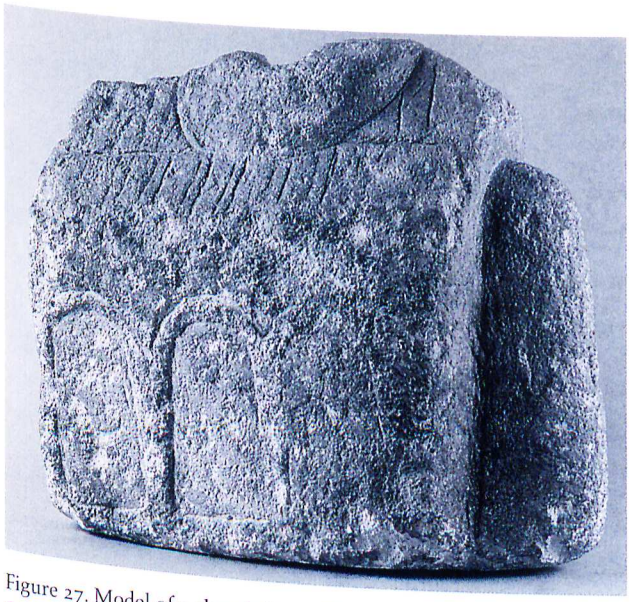


Figure 27. Model of a church from Cherven, Bulgaria, 12th century. Stone. Archaeological Museum, Rousse.

Figure 28. *Artophorion* inscribed with the name of Saint Anastasios the Persian, from Antioch, late 10th century. Aachen Cathedral treasury.

this category of models. Finally, the eighteenth-century model from Xeropotamou Monastery on Mount Athos (fig. 29),[152] in the context of a different era, clearly constitutes a model expressly made to represent the architect's idea for purposes of fund-raising, even though the idea was not adhered to faithfully. Certain models of old buildings, made in the nineteenth or the twentieth century, are also interesting. Although they usually serve memorial purposes (figs. 30 and 31), this function does not diminish the probability that they may also have been used in stages of the design process.[153]

Scholarly opinions differ regarding Byzantine two-dimensional representations of architectural models depicted in mosaics, frescoes, and low reliefs. According to some, churches represented in patrons' hands are representations made after the completion of a building and have a chiefly symbolic character.[154] The arguments for this point of view are presented by Čedomila Marinković, whose interpretation of evidence is based on the symbolic nature of Byzantine art, on the eschatological significance

Figure 29. Model of church at Xeropotamou Monastery on Mount Athos, 18th century.

Figure 30. Russian model of a house, probably 19th century. Wood. Vladimir-Reserve, Russia.

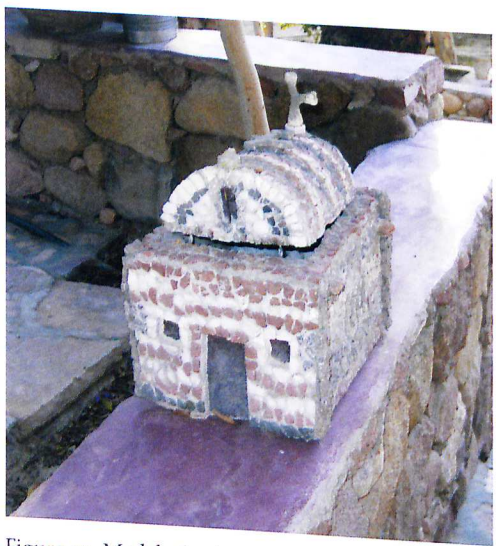


Figure 31. Model of a church at Faran Monastery, Sinai Peninsula, 20th century. Cement and stone.

of a church dedication, and on the desire of patrons to be judged in the Last Judgment as holding the actual church and not its model in their hands.[155] In her last argument, Marinković does not take into account that both cases are symbols; in other words, the symbolic and abstract depiction of a building is related to a mental model corresponding to a physical model, which is rendered on a symbolic and spiritual level. Other scholars argue that the buildings depicted on paintings are far more likely to represent real models, used for the implementation of an idea and thereafter accessible to the artist who depicted them in two-dimensional form.[156]

It is plausible that patrons were portrayed symbolically with the completed building in their hands in an attempt to show the object being offered. Yet, the artist could very well have used a church model in his composition as it would have facilitated a general representation, even if some secondary elements may have been modified during the construction process. In any case, the artist would have been fully familiar with the idea of a model and of its role on an imaginary level, if not on the real one. This, of course, is the opposite argument. Thus, the idea of a model fully bearing the weight of its spiritual content is present independently of whether the model itself was used as a physical object or as a memorized image to help an artist in the process of his two-dimensional rendering. The question to what extent painted models are faithful representations of the buildings depicted and whether they truly constitute representations of real models is a separate issue that has to be explored further. In some cases, however, represented parts of a church's superstructure corroborate the possibility that they are depicted in accordance with an existing model.[157]

Further arguments in support of this view are provided by Ioannis Varalis, who refers to thirteen cases of representations of models from the mid-sixth to the mid-ninth century, with relevant bibliography. In his opinion, they were real models, made very likely before construction, and, as such, were related to actual buildings and constituted project studies.[158]

Yet, in both ways of interpretating the role of models, the fact remains that painters and architects, for different reasons, were familiar with the idea and the existence of architectural models. If one takes into account the long survival of this practice, the quoted reference by Gregory of Nyssa can be usefully invoked as corroboration of the above hypothesis.[159] Even if one accepts that depicted models in portraits of patrons refer to buildings after their construction and that they were painted exclusively for symbolic purposes,[160] their depiction can still be seen as proof that there was particular familiarity both with the physical existence of models and with their deeper spiritual significance in the Byzantine world.

The low rate of survival of Byzantine models made for design purposes is very likely linked to the perishable nature of the materials used in their making, as discussed earlier. In keeping with contemporary ideology regarding the significance of a creative act, commonly attributed to God, any material evidence that tangibly revealed the human intellectual and creative contribution would not have complied with prevailing ideology and, therefore, would have been deemed unacceptable.[161] The baseness and expendability of materials used for study purposes in the process of elaborating ideas contributed greatly to the disappearance not only of models themselves, but also of all evidence of interim stages from the commission to the final completion of a building. This probably suited the purposes of patrons and builders alike, but for different reasons. Both parties seem to have shared an interest in inhibiting further diffusion of an idea, so that the final construction might be viewed as being unique. If the church itself was the house of God, the modest model of its creation would have constituted something akin to hubris once the purpose for which it was made had been fulfilled.

It is worth mentioning that all architectural representations known from the Middle Ages ascribe the primary role in the construction process to patrons and donors, and not to master builders. Patrons and donors were the preeminent facilitators of building activity and, therefore, they were the ones worthy of being portrayed and thus celebrated.[162] Raising the model of the offering to the level of a symbol as representation would be their only justification. This hypothesis leads to the interesting concept of the patron-architect, a subject deserving of a separate study.

Known three-dimensional or relief architectural models from Armenia, Georgia, and Bulgaria in stone (cat. nos. 3–5, 7) or ceramic material are perhaps of a different nature.[163] If, on the one hand, the arguments presented by Christina Maranci stand, most of the Armenian and Georgian models would seem to constitute liturgical objects,[164] quite unlike architectural models, although this does not mean that the latter were completely unknown in this context. According to Paolo Cuneo,[165] on the other hand, there were workshop models, as mentioned in a tenth-century source referring to a report drawn up by the Armenian architect Trdat.[166] Called upon to repair the dome of Hagia Sophia in Constantinople, he prepared a plan (*orinag*) and a model (*kaghabar*) for this specific task. It is remarkable that a model in this case was made of a specific building component, namely its dome. This demonstrates the architect's professional seriousness, sense of responsibility, and advanced working methodology. This has led to various discussions of building practices in Byzantium

and Armenia and their mutual relationship. It is certain that the role of three-dimensional models needs to be studied and clarified further in order for the broader problem to be properly understood.[167]

The significance of representing buildings through models in later years is attested by the reference to the above-mentioned model of Süleymaniye Mosque. Taking into consideration persistent preservation and survival of established functions and traditions, it would be unthinkable that such an important event as the 1582 parade (see fig. 26) could have been created on an *ad hoc* basis without a probable Byzantine precedent having its own deeper roots. The survival of model-making—at least for important buildings—during the Byzantine millennium should be regarded as certain.

PERSPECTIVE

Perspective is one of the best-known tools for representing architecture. Numerous scholars have examined the question of perspective in Byzantine pictorial compositions, attempting to understand it beyond the formulas that have defined European thought since the Renaissance.[168] In what follows, perspective representations are treated only to the extent that they might have constituted a tool in the hands of Byzantine architects for the presentation of the idea of space.

There has been considerable discussion of "inverted perspective" in Byzantine art, on the assumption that "true perspective" refers either to that used in antiquity or to the one-point linear perspective that evolved in Europe in the fourteenth and fifteenth centuries.[169] Byzantine perspective, however, cannot be defined in relation to other perspective systems because the reasoning and philosophy behind it constitute an alternative way of seeing the world: in the Byzantine approach, the notion of the Whole imbues the representation of space, where the image of the exterior is fused with the image of the interior space.

We can only guess what an architect's "demonstration tools" might have been. Sources and manuals refer to forms and through them analyze techniques. In the early stages of the process, the architect's concern was to record the idea that would permeate the solution and lead to more architectural *loci* rather than to propose a fully defined architectural solution. One could say that a Byzantine representation—as preserved in the visual arts—returns to the object once it is complete. Representations trace these *loci* and depict them as the essence of architecture.

Because the question of a Byzantine artist's conscious choice of a "multifocal" or "multicentered" rendering of space has not been adequately discussed, such an approach is difficult to grasp. Modern references to representations of architecture are rare. They were thoroughly discussed for the first time, together with the question whether Byzantines knew and used one-point perspective, by Pavel Florensky on the basis of a multitiered interpretation.[170]

One could also say that one-point perspective compresses time into a single instant, unless other "tools" are used simultaneously. Byzantine multifocal perspective expands time, freeing the beholder from convention and introducing abridgements as

allusions to symbols or comprehensive notions. It recognizes a reality that is never seen as the perceiver might expect it, and rejects any connivance on the part of the maker in presenting an *illusion* of reality. A Byzantine artist sought truth and swept away illusions by relying, as Florensky argued, on visual abridgements, ideograms, and symbols.[171]

For Byzantine architects, knowledge and use of perspective (one-point or linear) can be assumed as a familiar heritage, though this cannot be proven beyond doubt. The way Renaissance perspective was used required specific technical training, and it is not known whether the education and training of Late Byzantine architects or architect-painters enabled them to use such tools.

The quest for knowledge associated with antiquity was kept alive not only in Byzantium, where it gave rise to numerous "revivals" in many fields, but also in the world of Islam. An eleventh-century treatise on optics by Abu Ali Hasan (965–1040),[172] widely read in translation by the thirteenth century, indicates the sorts of issues considered and discussed in neighboring lands with which Byzantium had intense cultural exchanges.[173] Known in the West as Alhazen, he was a man of exceptional erudition who translated many scientific treatises from Greek into Arabic. Among his own numerous works, the book on the theory of optics was a major contribution to science. Thorough future research into the relations between Byzantines and Arabs will contribute to our knowledge of the extent and conditions of scientific exchange and may answer questions as to whether Alhazen's treatise on optics, or other scientific literature, had any significance for Byzantine architects.

CONCLUSIONS

In summary, we may draw the following general conclusions. (1) Continuity in *representation* of architecture for the development of projects was a familiar and shared background for Byzantine creators. (2) The destruction of data and other evidence cannot be considered proof of a disruption of the aforementioned continuity. (3) A hypothesis that there was no architectural theory in Byzantium cannot be based on the alleged absence of drawings. (4) The question of three-dimensional representations of Byzantine architecture is still open. (5) Scale and proportions seem to have been used to an exceptionally refined degree. (6) Fine draftsmanship enabled Byzantines to use complex methods for the study of demanding constructions. (7) Models and copies, as representations, have a specific weight for the elaboration of studies for certain categories of Byzantine buildings. (8) Although perspective representation may have been known—possibly limited to a level of practical written discourse—it would have been regarded as illusory and, as such, unacceptable.

The question of representations for the purpose of architectural design in Byzantium will remain open until sources are reexamined from these viewpoints and new correlations are made. Theories on the disruption of creative tools and methods in the Byzantine and medieval eras should be reassessed critically and objectively. The human factor and human creative abilities must be teased out of the shadows of history.

NOTES

The quote from Plato is the Benjamin Jowett translation (*Kratylos* 439); the translation of the passage from Saint John of Damascus (*De imag. orat.* III.16ff.) is by Cyril Mango.

1. On this topic, see B. Glanville Downey, "Byzantine Architects: Their Training and Methods," *Byzantion* 18 (1948): 99–200. Milka Čanak-Medić ("Teorijska sprema i stepen obrazovanja srednjovekovnih graditelja" [Serbian with French abstract], in *Zbornik zaštite spomenika kulture*, Poseban otisak 18 [Belgrade, 1967], 5–22) discusses the training and education of architects in the Middle Ages in Byzantium and the Balkans and what the available background knowledge might have been; the author, a distinguished professor emerita in the Faculty of Architecture at the University of Belgrade with a wealth of publications in the field of medieval architecture, was among the first to take an interest in the issue. See also more recently by the same author, "Postupci starih neimara pri projektovanju i izvodjenju gradjevina" [Procedures employed by medieval builders in the process of designing and constructing buildings], in *Razvoj nauke u oblasti gradjevinarstva i geodezije u Srbiji* (Belgrade: Gradjevinska knjiga, 1996), 29–50, which deals with procedures and background knowledge, particularly in the field of bridge construction. In modern European manuals on the history of architecture, little is said of Byzantine architecture, which in terms of theory is generally considered within the framework of oral tradition; see Walter J. Ong, *Orality and Literacy: The Technologizing of the Word* (New York: Methuen, 1982); for the relationship to drawings, Vasileios Karachalios, "Ιστορία και προϊστορία των εργαλείων αναπαράστασης του αρχιτεκτονικού σχεδιασμού. Η μετάβαση από την προφορικότητα στην εγγραμματοσύνη," in *Η αναπαράσταση ως όχημα αρχιτεκτονικής σκέψης*, eds. V. Trova, K. Manolides, and G. Papakonstantinou (Volos: University of Thessaly, Dept. of Architecture, 2006), 231–38 and esp. 235 ff.
2. Robert G. Ousterhout, *Master Builders of Byzantium* (Princeton: University Press, 1999).
3. Charalambos Bouras, "Originality in Byzantine Architecture," in *Mélanges Jean-Pierre Sodini*, Travaux et mémoires 15 (Paris: Association des amis du Centre d'histoire et civilisation de Byzance, 2005), 9–108, discusses drawing and its modes in Byzantium and, rejecting the views expressed by Ousterhout, argues that design was used in Byzantium.
4. Stavros Mamaloukos, "Ζητήματα σχεδιασμού στη βυζαντινή αρχιτεκτονική," *DCHAE* 24 (2003): 119–28.
5. See Paul Lampl, "Schemes of Architectural Representation in Early Medieval Art," *Marsyas* 9 (1960–61): 6–13, which refers to the basic principles and rules for representation in the West from the 4th to the 12th century; to a large degree, these are also valid for representations in Byzantine art. See also the particularly significant contribution of Anka Stojaković, in *Arhitektonski prostor u slikarstvu srednjovekovne Srbije* [L'espace architectural dans la peinture de la Serbie médiévale] (Belgrade: Matica srpska—Odeljenje za likovne umetnosti, 1970); and by the same author, "Ktitorski model Resave," in *Moravska škola i njeno doba*, ed. Vojislav Djurić (Belgrade: Filozofski fakultet—Odeljenje za istoriju umetnosti, 1972), 269–76 and "Architektonske skraćenice u vizantijskom slikarstvu" [Architectural abbreviations in Byzantine painting], *Zograf* 13 (1982): 59–63. See also Oleg Grabar, *The Mediation of Ornament*, chap. 4, "The Intermediary of Architecture" (Princeton: University Press, 1989), 155–93.
6. The term "inverted perspective" was used by Dmitrij Vasil'evič Ainalov in *The Hellenistic Origins of Byzantine Art*, trans. Elizabeth and Serge Sobolevitch, ed. Cyril Mango (New Brunswick, N.J.: Rutgers University Press, 1961), 219. The first to deal thoroughly with this issue was Pavel Florensky ("Η αντίστροφη προοπτική," in *Η αντίστροφη προοπτική—Το εικονοστάσι*, introduction, trans. into Greek with notes by S. Souvela (Athens: Ίνδικτος, 2002), from the French edition: *La perspective inversée suivi de l'iconostase* (Lausanne: L'Âge d'homme, 1992); future citations are from the Greek edition. See also the Italian ed.: *Lo spazio e il tempo nell'arte* (Milan: Adelphi ed., 2001²). Florensky's treatise, written in Russian in 1919 and read in a public lecture, introduced the term and constitutes the most thorough analysis of the non-perspective system, so-called inverted perspective, a term that is conventional rather than substantive. Earlier, see Oskar Wulff, "Die umgekehrte Perspektive und die Niedersicht: Eine Raumanschauungsform der Altbyzantinischen Kunst und ihre Vorbildung in der Renaissance," in *Kunstwissenschaftliche Beiträge A. Schmarsow gewidmet zum fünfzigsten Semester seiner akademischen Lehrtätigkeit*, ed. Heinrich Weizsäcker (Leipzig: K. W. Hiersemann, 1907), 1–40. Also on perspective, see Erwin Panofsky, "Die Perspektive als 'Symbolische Form'," in *Vorträge der Bibliothek Warburg, 1924–25*, ed. Fritz Saxl (Leipzig: Teubner, 1927), 259–330; published in 1970 as a book in English, *Perspective as Symbolic Form*, trans. Christopher S. Wood (New York: Zone Books, 1991). Particularly interesting is the new approach to perspective by Hubert Damisch, *L'origine de la perspective* (Paris: Flammarion, 1994²), esp. 98 ff.; English ed., *The Origin of Perspective*, trans. John Goodman (Cambridge, Mass.: MIT Press, 1994).
7. See Philippos Oreopoulos, *Le modèle spatial de l'Orient Hellène: Le discourse néohellénique sur la ville et l'architecture* (Paris: L'Harmattan, 1998); also *Ο νεοελληνικός λόγος για την αρχιτεκτονική και την πόλη. Το χωρικό μοντέλο της ελληνικής Ανατολής* (Athens: Estia, 1998) (future citations are from the Greek edition); this important study deals with theoretical matters related to architectural thinking from the 11th century onward.
8. N. K. Moutsopoulos: *Harmonische Bauschnitte in den Kirchen vom Typ kreuzförmigen Innenbaus im griechischen Kernland* (Munich: C. H. Beck'sche, 1962); "Μορφολογικές παρατηρήσεις και αρμονικές χαράξεις στους εγγεγραμμένους σταυροειδείς ναούς," in *Βυζαντινά άρθρα και μελετήματα 1959–1989* (Thessaloniki: Πατριαρχικό Ίδρυμα Πατερικών Μελετών, 1990), 151–69, with older bibliography; "Ο Ταξιάρχης των Καλυβίων παρά την Κάρυστον: Τεκτονική και μορφολογική ανάλυσις," in ibid., 85–130; A. Rachenov, "Das bulgarisch-byzantinische Architektursystem," in *Atti del V Congresso Internazionale di Studi Bizantini* 2 (1940), 352 ff.; K. Afanasief, *Postroenie arkhitekturnoi formi drevnerusskimi zodinmi* (Moscow: 1961); Djordje Petrović, *Teoretičari proporcija* (Belgrade: Vuk Karadžić, 1967); Nevenka Spremo-Petrović, *Proporcijski odnosi u*

bazilikama Ilirske prefekture (Belgrade: Arheološki institut, 1971) (with abstract in French: *Proportions architecturales dans les plans des basiliques de la préfecture de l'Illyricum*) and later on the same matter, Hans Junecke, *Proportionen frühchristlicher Basiliken des Balkan im Vergleich von zwei unterschiedlichen Messverfahren: Proportionen der Hagia Sophia in Istanbul* (Tübingen: Wasmuth, 1983), with earlier bibliography, esp. 12–13 and n. 12.

9. See Junecke, *Proportionen*, 46–47.

10. According to current Greek terminology, which was used by Vitruvius and later adopted by contemporary scholars of the Renaissance and theoreticians based on Alberti. He refers to the term *ichnographia* (tracing) of Greek origin. The terms *orthographia* and *skênographia* are used respectively for elevation drawings and scenographic drawings. See also the work of Lothar Haselberger, esp. "Architectural Likenesses: Models and Plans of Architecture in Classical Antiquity," *JRA* 10 (1977): 77–94. I am referring to construction drawings preserved on the temples themselves (Apollo at Didyma, Athena at Priene, Artemis at Sardis), a practice that continued into the Middle Ages. See also the discussion by Čanak-Medić in "Theorijsaka Sprema" and "Postupci"

11. Vitruvius, in *De Architectura* (book 1), refers mainly to architecture before his time and only minimally to his contemporaries, thus describing the buildings of the Hellenistic and Early Roman periods.

12. See notes 23–25 below.

13. For the three-storied house in the ancient kingdom of Urartu, see British Museum, 2d floor, exhibit no. 54, late 8th century B.C. (area of biblical Ararat, 860–585 B.C in a plateau bordering on Asia Minor, Mesopotamia, and the Caucasus, near Lake Van): see Boris B. Piotrovsky, *The Ancient Civilization of Urartu* (New York: Cowles Book Co., 1969).

14. In the archaeological museum at Delphi, one can see many architectural representations in reliefs belonging to the Siphnian and Athenian treasuries.

15. See Museum of Fine Arts, Boston, Roman Gallery, for example, acc. no.03.883, 03.885.

16. See Museum of Fine Arts, Boston, Roman Gallery acc. nos 33.496, 33.497, 33.500. Also see Maxwell L. Anderson, *Pompeian Frescoes in the Metropolitan Museum of Art* (New York: Metropolitan Museum of Art, 1987) (reprint from the *Bulletin of the Metropolitan Museum of Art*, Winter, 1987–88), with the basic bibliography. For Stabia, see *In Stabiano: Exploring the Ancient Seaside Villas of the Roman Elite*, ed. Angelo Pesce (Castellammare di Stabia: Nicola Longobardi editore & Soprintendenza Archeologica di Pompei, 2005[2]) and *Otium Ludens. Stabiae:At the Heart of the Roman Empire*, exh. cat., ed. Angelo Pesce (Castellammare di Stabia: Nicola Longobardi editore & Soprintendenza Archeologica di Pompei, 2007).

17. On illusionistic drawing, especially in relation to theater, see Florensky, *Αντίστροφη προοπτική*, 27–78; also n. 1 on 281–82. On the historical evolution of the system from Classical antiquity until the Byzantine era, 30 ff., 41–42. See also Victor Bychkov, who accepts Florensky's analysis: *Βυζαντινή αισθητική: Θεωρητικά προβλήματα*, trans. Konstantinos Charalampides (Athens: E. Tzapherē, 1999), chap. 2, originally *Vizantijska estetika: Teoriticheskie problemy* (Moscow: Iskusstvo, 1977). I also refer below to the Serbian edition (Victor V. Bičkov, *Vizantijska estetika: Teorijski problemi*, trans. D. M. Kalezić [Belgrade: Prosveta, 1991]), which is more recent and has been enriched with three additional chapters.

18. On illusionistic representation, see Célestine Dars, *Images of Deception: The Art of Trompe-l'œil* (Oxford: Phaidon, 1979), 7–11; and on the same subject since antiquity, see Patrick Mauriès, *Le Trompe-l'œil de l'antiquité au XX^e siècle* (Paris: Gallimard, 1996). Agatharchus the Samian (5th century B.C. scenographer), Anaxagoras, and Democritus have dealt with illusionistic painting, as discussed by Florensky, *Αντίστροφη προοπτική*, 37–40. Yet, despite the allegation that the creation of illusion was not important and is said to have disappeared in medieval and Byzantine visual works, one ought to underscore the methods of Byzantine architects of the Komnenian era to create volume through the use of receding arches, as in the Church of the Pantokrator [or Church of Christ Pantokrator] in Constantinople (somewhat similar to Romanesque entrances, as in the twelfth-century baptistery of the palace chapel of the kings of Mallorca, Perpignan).

19. Florensky, *Αντίστροφη προοπτική*, 40 and n. 11.

20. See Lampl, "Schemes," 7, 9.

21. Based on a lack of extant drawings and related texts, the period under discussion has been termed in a somewhat facile way the "prehistory of drawing"; see, e.g., Karachalios, "Ιστορία και προϊστορία των εργαλείων αναπαράστασης." Florensky's position is interesting as it acknowledges an evolutionary progress in the matter of representation (*Αντίστροφη προοπτική*, 43 ff.).

22. See Rabun Taylor, *Roman Builders: A Study in Architectural Process* (Cambridge: Cambridge University Press, 2003), 181.

23. For the Forma Urbis (or Pianta Marmorea or Forma Urbis Marmorea), see the basic study by Gianfilippo Carettoni, Antonio Colini, Lucos Cozza, and Guglielmo Gatti, eds., *La pianta marmorea di Roma antica: Forma urbis Romae* (Rome: Graf. Danesi, 1960). Also see the three important studies by Emilio Rodríguez Almeida: "Forma Urbis Marmorea: Nuove integrazioni," *Bullettino della Commissione Archeologica Comunale di Roma* 82 (1970–71): 105–35; *Forma Urbis Marmorea: Aggiornamento Generale 1980* (Rome: Quasar, 1981); and *Formae Urbis Antiquae: Le mappe marmoree di Roma tra la Repubblica e Settimio Severo*, vol. 305, *CÉFR* 2002. The Stanford Digital Forma Urbis Romae Project is an excellent introduction to the subject (http://formaurbis.stanford.edu) and includes extensive bibliography.

24. Rodríguez Almeida, "Forma Urbis" and David West Reynolds, "Forma Urbis Romae: The Severan Marble Plan and the Urban Form of Ancient Rome" (Ph.D. diss., University of Michigan, 1996), 115–23 and http://formaurbis.stanford.edu/docs/FURmap.html.

25. The story of the map is interesting; see Reynolds, "Forma Urbis Romae." In the early 5th century, serious damage was caused by the construction of a portico at right angles to the wall of the *aula*. In 530, the Church of Saints Cosmas and Damian was constructed adjacent to the wall. In the later Middle Ages, the space of the Templum Pacis with its *aula* gradually became derelict and suffered serious damage—a large number of marble slabs were pilfered and used as construction materials or for the production of lime. The remaining slabs collapsed and were gradually buried. The deterioration of the map in the Middle Ages raises many questions.
26. Reynolds, "Forma Urbis Romae," 124–34. Reynolds convincingly argues that there must have been two maps and that both must have been kept in the *aula* of the Templum Pacis, which functioned as a cadastral record office in Rome. Reynolds suggests that the original drawing must have been on papyrus and would have constituted the official cadastal records of Rome. This map must have included precise annotated information on properties, measurements, dimensions, comments, and so on. The map folios would have been accessible to citizens and would have been constantly updated. The drawing on marble therefore indicates that census activity took place there and it also had an ornamental character.
27. Charalambos Bouras, "A Sketch Plan of Late Antiquity in Athens," *DCHAE* ser. 4, vol. 28 (Athens 2007): 31–34.
28. V. Bitrakova Grozdanova, *Monuments Paléochrétiens de la région d'Ohrid* (Ohrid: Institut pour la Protection des Monuments de la Culture et Musée National d'Ohrid, 1975), 37–38, photo 8a.
29. For similar representations, see ibid., photo 8b; see also Dana Mihai, "Materiale, tehnici de constructie si solutii constructive documentate arheoligic in tara romaneasca, secolele XVI–XVII," *Revista Monumentelor Istorice* 1 (Bucharest, 2001–3): 59–64, fig. 1 for a 13th-century brick similar to that from Ohrid; and Natela Aladashvili, *Monumentalnaja skulptura Gruziji* (Moscow, 1977): 102–3, figs. 116–17. In the wall paintings discovered by L. A. Deriziotis (Dousiko, Meteora, Dionysiou Monastery), as well as in Vlatadon Monastery, there is remarkable freedom in the underdrawing that preceded the final painting. Consequently, the elaboration of a concept was known and present/actual.
30. Aladashvili, *Monumentalnaja skulptura*, on the church at Korogo with the plan next to the founders.
31. It is the model of the *katholikon* at Xeropotamou Monastery. See three studies by Miltiades Polyviou: "Σχεδιασμός και κατασκευή στη ναοδομία του 18ου αι. Η περίπτωση του καθολικού της Μονής Ξηροποτάμου," *Μνημείο και περιβάλλον* 2 (Thessaloniki, 1994): 83–90; "Το σχήμα του ναού το ξύλινον . . . ," in *Θυμίαμα στη μνήμη Λασκαρίνας Μπούρα* (Athens: Benaki Museum, 1994), 267–72, color plate XXVII and figs. 153–58; and *Το καθολικό της Μονής Ξηροποτάμου: Σχεδιασμός και κατασκευή στη ναοδομία του 18ου αιώνα* (Athens: TAPA, 1999). Of course, Renaissance architects had long ago established this method of working.
32. For more details on representation, see Florensky, *Αντίστροφη προοπτική*, 79 ff., 94: "a representation does nothing but signify, indicate, suggest the idea of the original, without providing any copy or model of the original." This relationship is identified also in modern art, as discussed by Filiberto Mena, *La linea analitica dell' arte moderna* (Turin: Einaudi, 1975).
33. Vasilios T. Stavridēs, *Η Ζ' οικουμενική σύνοδος. Νίκαια β', 787* (Hē VII Oikoumenikē Synodos, Nikaia b, 787) (Thessaloniki: Kyriakidēs Bros., 1987).
34. See the drawings shown in figures 12a–c and 19a–c in this essay; also James S. Ackerman, *Origins, Imitation, Conventions: Representation in the Visual Arts* (Cambridge, Mass.: MIT Press, 2002), the drawings on pages 10–90. Note the connection to the fact that the use of parchment was known in antiquity and spread from the beginning of the 7th century thenceforth. The use of paper was widespread in Europe by the 13th century; see Elpidio Mioni, *Introduzione alla paleografia greca*, Studi bizantini e neogreci 5 (Padua: Liviana, 1973) and the Greek edition *Εισαγωγή στην ελληνική παλαιογραφία*, trans. N. M. Panayotakes (Athens: MIET, 1977), 25 ff. (citations from the Greek edition); see also Jonathan Bloom, *Paper before Print: The History and Impact of Paper in the Islamic World* (New Haven: Yale University Press, 2001), 16 ff., 160 ff., and 202 ff. about the spread of paper usage in Christian Europe.
35. On this survival, see the example presented by Vasilike Phatsea, "Η αινιγματική σχέση χώρου και χρόνου στο αρχιτεκτονικό σχέδιο και η σημασία της: Με αφορμή το σκαρήφημα ενός αθηναϊκού σπιτιού του 19ου αιώνα," in *Η αναπαράσταση ως όχημα της αρχιτεκτονικής σκέψης* (Volos: University of Thessaly, Department of Architecture, 2006), 198–212. This particular drawing is a vehicle of a concept known to Byzantine tradition and its "creator," someone who had not yet assimilated Western culture. It is worth noting that the first manual by Pizzamano on architecture was published for a Greek public in Corfu in Italian in 1820: Gerasimo Pizzamano, *Saggio d'architettura civile con alcune cognizioni comuni a tutte le belle arti del cavaliere Gerasimo Pizzamano di Cefallonia, archeologo, pittore, ed ingegnere, publico professore d'architettura civile nell'Academia delle belle arti del Ionio* (Corfu, 1820); see Oreopoulos, *Le modèle spatial*, 383 ff.
36. On the role of the work of Julian of Askalon, see Oreopoulos, *Le modèle spatial*, 49, 177–84, and passim; and in more detail, Vasilikē Tourptsoglou-Stephanidou, "Οι 'νόμοι' του Ιουλιανού του Ασκαλωνίτη ένα εγχειρίδιο οικοδομικής του 6ου αι. από την Παλαιστίνη στη Θεσσαλονίκη του 14ου," *Θεσσαλονίκη Επιστημονική Επετηρίδα του Κέντρου Ιστορίας του Δήμου Θεσσαλονίκης* 5 (1999): 79–119.
37. See the analysis by Oreopoulos, *Le modèle spatial*, 35 and 79–86. The analysis of the relationship between mathematics and architecture remains to be explored.
38. As demonstrated in Erich Schilbach, *Byzantinische Metrologie* (Munich: C. H. Beck, 1970).
39. Ibid., 13.
40. See note 96 below.
41. See Čanak-Medić, "Teorijska sprema," 12–16, which refers to Byzantine libraries and institutions related to this issue, and Čanak-Medić, "Postupci," 29–50.

42. For papyrus and palimpsests, see L. D. Reynolds and N. G. Wilson, *Scribes and Scholars: A Guide to the Transmission of Greek and Latin Literature*, 2d ed. (Oxford: Clarendon Press, 1975) (*Αντιγραφείς και φιλόλογοι: Το ιστορικό της παράδοσης των κλασσικών κειμένων*, trans. N. M. Panayotakes [Athens: MIET, 2001³]), 228–34). Also for recent research, see Zēsēs Melissakēs, "Οι παλίμψηστοι κώδικες της Εθνικής Βιβλιοθήκης της Ελλάδος. Προκαταρκτικά συμπεράσματα μιας έρευνας," *Βυζαντινά Σύμμεικτα* 16 (2003–4): 159–216. It should be noted that the change from papyrus to parchment must have been a kind of technological revolution with considerable consequences.
43. See the drawings of Reims Cathedral (13th–14th centuries, subsequently reconverted and later rebuilt). Yet another characteristic of parchment is that it is not particularly suitable for scale drawings, since it is subject to change according to environmental conditions. For the Reims palimpsest, see Robert Branner, "Drawings from a Thirteenth-Century Architect's Shop: The Reims Palimpsest," *JSAH* 17 (1958): 1–21 and "Villard de Honnecourt, Reims, and the Origin of Gothic Architectural Drawing," *Gazette des Beaux-Arts* 61 (1963): 129–46; and James S. Ackerman, *The Origins of Architectural Drawing in the Middle Ages and Rennaissance* (Cambridge, Mass.: MIT Press, 2002), 27–65 and passim.
44. Ever since antiquity, folding wooden tablets were used for writing and, consequently, perhaps for drawing; see Laurentino Garcia y Garcia, *Pupils, Teachers, and Schools in Pompeii: Childhood, Youth, and Culture in the Roman Era*, Collezione archeologica 4 (Rome: Bardi, 2005), 87 ff., 158–61 with figures and recent bibliography, and figs. 51–54, 57, 62–63, 72. Similar techniques were employed by cartographers, who included, among other things, representations of architecture. See, for example, where the broader area is rendered through the depiction of houses within a wider context symbolizing a particular point of reference. There is a characteristic reference in a letter of Eustathius of Thessaloniki, which is included in *oikoumenês periêgêsis* (see Oreopoulos, *Le modèle spatial*, 38–39), where addressing Andronikos, Eustathius comments on drawings and paintings: Πυκνὸς δὲ ἐστὶ (ὁ Διονύσιος) καὶ τὴν συμπλήρωσιν καὶ τὴν ἐπανάληψιν, συχνὰ καὶ τοῖς τοιούτοις διὰ σαφήνειαν ἐναγλαϊζόμενος σχήμασι . . . ὁ Αἰγύπτιος πολλὴν περιεληλυθὼς γῆν πιναξὶ τὲ δέδωκε τὴν περίοδον, καὶ τῆς τῶν πινάκων ἀναγραφῆς οὐκ Αἰγυπτίοις μόνον (p. 9): that not only in Egypt were wax tablets well known.
45. As mentioned by Gregory of Nyssa: S. Gregorii Nysseni, *PG* 46, p. 665 and *Gregorii Nysseni Opera*, vol. 9, *Sermones*, pars I, eds. G. Heil, A. von Heck, E. Gebhard, and A. Spira (Leiden: Brill, 1967), 257, cols. 22–25.
46. On this issue, see Giorgos Kordes, *Εν ρυθμώ: Το ήθος της γραμμής στη βυζαντινή ζωγραφική* (Athens: Αρμός, 2000) and esp. 25–27 and 69 ff.
47. The compass became known in Europe in the same century; see Frederic C. Lane, "The Economic Meaning of the Invention of the Compass," *American Historical Review* 68, no. 3 (1963): 605–17.
48 See, in general, Oreopoulos, *Le modèle spatial*, 270–75 and 280–82 with bibliography.
49. This is a broad issue that has not been studied adequately; see, e.g., in: *Sources chrétiennes* (cur. dir: Bernard Meunier) (Paris: Éditions du Cerf); also the texts of Maximos the Confessor in *Μυσταγωγία*, intro. and comments by D. Stavisloas, trans. Ignatios Sakalēs (Athens, Αποστολική Διακονία της Εκκλησίας της Ελλάδος, 1989), and Kosmas Indikopleustes, *Χριστιανική Τοπογραφία*, trans. Phanes Kalaitzakes (Athens: Στοχαστής, 2007–8), and Cosmas Indicopleustes, *Geogr., Topographia Christiana*, Book 4, section 3, line 6; Book 4, section 7, line 10; Book 4, section 17, line 2. For the reverse process, i.e., the symbolism of architectural elements with human figures, see the discussion of the icon of the Forty Martyrs of Sebaste, where the saints and Christ are symbols of the building walls and vaults (Slobodan Ćurčić, "Architecture as Icon," in this volume). See conclusions from Ruth Webb, "The Aesthetics of Sacred Space: Narrative, Metaphor, and Motion in *Ekphraseis* of Church Buildings," *DOP* 53 (1999): 59–74.
50. For a discussion of the issue of the creator and how he was perceived, see Svetozar Radojčić, "Opasnosti stvaranja kao tema u narodnom pesinštvu," in *Odabrani Članci i studije 1933–1978* (Belgrade: Izdavački zavod Jugoslavija), 280–88.
51. This phenomenon is related to the role of authority and its representatives and is constantly present. A more covert form is the attribution of creation to socio-political factors and the suppression of individual initiative.
52. See Radojčić, "Opasnosti," 282–83, on the relationship between principal, artist, and architect; 284, specifically on Ignatius, architect of Hagia Sophia at Constantinople. See also Georgios Codinus, *De structura templum S. Sophiae* (Bonn, 1843), 145–46 and *Το Χρονικό του Γεωργίου Κωδινού για το κτίσιμο της Αγίας Σοφίας* (Athens: Akritas, 1987); he also discusses the narrative stereotypes transmitted through vernacular literature, describing as arrogance the naturally increasing aptitude and know-how on the basis of experience. He says that this was a reason for differences of opinion between patron and architect, which not uncommonly led to the latter's demise, recalling the ancient practice of human sacrifice.
53. See Spiro Kostof, "The Architect in the Middle Ages, East and West," in *The Architect: Chapters in the History of the Profession* (New York: Oxford University Press, 1977), 59–95; H. A. Meek, "The Architect and His Profession in Byzantium," *RIBA Journal* 59 (1952): 216–20; Argyris Petronotes, *Ο Αρχιτέκτων στο Βυζάντιο* (Thessaloniki: the author, 1984), 14–21, who raises some similar issues; and Downey, "Byzantine Architects: Their Training and Methods." The topic is also discussed by Yannēs Gerasēs, *Η εικόνα ως οντολογία του αγαθού* (Athens: Ροές, 1994), 38–39.
54. Terence Hawkes, *Metaphor* (London: Methuen, 1972). See Ćurčić and McVey in related essays in the present volume.
55. On contemporary approaches to this issue, see *Πρακτικά του συνεδρίου Η αναπαράσταση ως όχημα της αρχιτεκτονικής σκέψης*, ed. V. Trova (Volos: Πανεπιστήμιο Θεσσαλίας Τμ. Αρχιτεκτόνων, 2006).
56. Detailed discussion in D. V. Ainalov, *The Hellenistic Origins of Byzantine Art* (New Brunswick, N.J.: Rutgers University Press, 1961); see also the Serbian edition of Bičkov, *Estetika*, chap. 6, "Antičke tradicije," 260–97 (this

chapter, which is not included in previous editions, contains a detailed study of the issue) and Florensky, *Αντίστροφη προοπτική*, historical notes 27–78 and esp. 34–44.

57. Homily M22 by Isaiah: "Ο στήσας καμάραν τον ουρανόν και διατείνας ως σκηνήν κατοικείν," and the Psalm "ο εκτείνων τον ουρανόν ωσεί δέριν," where the sky is compared to a tent; also G. A. Prokopiou, *Συμβολισμός του βυζαντινού ναού* (Athens: Pyrinos Kosmos, 1981). On metaphors and metaphorical use of descriptions, see the important article by Ruth Webb, "Aesthetics of Sacred Space."
58. Gregorius Nazianzenus Theol., *De testamentis et adventu Christi* (Carmen dogmaticum 9), additamentum inter vv. 18 et 19, line 14; on the builder of a church, see also Bernhard Wyss, "Zu Gregor von Nazianz," in *Phyllobolia, für Peter von der Mühll zum 60. Geburtstag am 1. August 1945* (Basel: Schwabe, 1946), 160–63.
59. Theodorus Theol., *Fragmenta in epistulam ad Hebraeos (in catenis)*, p. 209, line 8: ὡσπερ δε σύμβολον του κόσμου κατασκευάσαι κατά τινα τύπον την σκηνήν . . . [as the symbol of the world to construct a kind of a tent, etc.]. See also Maximos Omologetes, *Μυσταγωγία*, trans. Sakalēs, 80–81.
60. See also an eleventh-century ivory depicting the Forty Martyrs of Sebaste; note 49 above.
61. See Theodorus Theol., *Fragmenta in epistulam ad Hebraeos (in catenis)*, p. 209, line 8 (continuing from note 59 above): . . . τῷ Μωϋσεῖ κελεύων, ὁ Θεὸς προσέταξεν αὐτῷ περίβολον ποιῆσαι ἀπὸ τῶν κατά-πετασμάτων μέσω διειλημμένον ἑτέρῳ, οὕτω δὲ καὶ ὁ ναὸς κατὰ τὸν αὐτὸν ὕστερον ἐγένετο τύπον [concerning God's will that Moses construct a tent as a symbol of the world and that he also create an enclosure and a temple imitating the tent]; see also Cosmas Indicopleustes, *Geog., Topographia Christiana*, Book 3, section 24, line 8: Ὁ δὲ πρὸς αὐτοὺς ἁρμοδίως ἐξ αὐτοῦ τοῦ προκειμένου αἰνιγματωδῶς ποιήσεις ἐπηγγείλατο. Λέγω δὴ τὴν κατάλυσιν τοῦ ναοῦ καὶ τὴν ἀνακαίνισιν αὐτοῦ, ὅτι ἡ μὲν κατάλυσις τοῦ ναοῦ, ἤγουν τοῦ σώματος αὐτοῦ, κατάλυσις ἐστὶ τοῦ κόσμου τούτου, ἡ δὲ ἀνακαίνισις καὶ ἀλλαγὴ τοῦ ναοῦ, ἤγουν τοῦ σώματος αὐτοῦ, ἀνάδειξις τῆς μελλούσης καταστάσεως [where Cosmas refers to a destruction of the temple and its following restoration; the destruction would symbolize the destruction of the world and the restoration would stand for the future].
62. On the cross-shaped form of the church of the Holy Apostles at Constantinople and the ease of its technical description by Prokopios, see *De aedificiis*, book 1, chapter 4, section 11, line 3 (as it appears in the "Diogenes" thesaurus); Jacopus Haury, ed., *Procopii Caesariensis Opera Omnia*, 3 vols. (Leipzig, 1913), 2d ed., 4 vols., ed. Gerhard Wirth (1964).
63. English trans. in George C. Berthold, *Maximus Confessor: Selected Writings*, intro. by Jaroslav Pelikan, preface by Irénée-Henri Dalmais, CWS (New York: Paulist Press, 1985).
64. On the first models, see R. Ousterhout, "The Temple, The Sepulchre and the *Martyrion* of the Savior," *Gesta* 29, no. 1 (1990): 44–53, with earlier bibliography; art objects are discussed by Yannis D. Varalis, "Μακέτες ή κτήρια? Μικρογραφικές απεικονίσεις εκκλησιών κατά την α΄ χιλιετία," in *Architectural Models in Medieval Architecture (Byzantium, S. E. Europe, Anatolia)*, Proceedings of Seminar 3, ed. Y. D. Varalis, AIMOS Seminar Series II, Theoretical Issues in Medieval Architecture, dir. Evangelia Hadjitryphonos (Thessaloniki: University Studio Press, 2009), 22–32; this includes earlier bibliography.
65. On this issue, see Oreopoulos, *Le modèle spatial*, 97.
66. For a further discussion of the above, see Oreopoulos, *Le modèle spatial*, 99–101.
67. Thoroughly discussed by Oreopoulos, ibid., 89, 102 ff., 105.
68. Ivan Stevović, *Kalenić: Bogorodičina crkva u arhitekturi poznovizantijskog sveta* (Belgrade, 2006), 170, on the significance of the chessboard as decorative/symbolic motif. Also Mara Harisiadis, "Ornament ruskogog Parenesisa Sv. Jefrema Srpske Akademije Nauka," *Bibliotekar* 3, g. XIV, 264–71: a Ms on parchment from 1337 by Geōrgios Anagnōstes carries on the second folio a full-page representation of a building with chessboard decorations related to churches of the Morava school.
69. K. Ntaphlos, "Ιδέες και τεχνικές στην ιστορία των αναπαραστάσεων," in *Η αναπαράσταση ως όχημα της αρχιτεκτονικής σκέψης*, 223–30, esp. 227.
70. Richard Krautheimer, "Introduction to an Iconography of Medieval Architecture," *JWarb* 5 (1942): 1–33; repr. in Richard Krautheimer, *Studies in Early Christian, Medieval, and Renaissance Art* (New York: University Press, 1969): 115–50.
71. See Richard Krautheimer, "The Carolingian Revival of Early Christian Architecture," *Art Bulletin* 24 (1942): 1–38; repr. in *Studies in Early Christian, Medieval, and Renaissance Art*, 203–56; Evangelia Hadjitryphonos, "Pilgrimage Monument as Space in the Eastern Mediterranean: The Egeria Project," in *Routes of Faith in the Medieval Mediterranean, Proceedings of an International Symposium, Thessaloniki November 7–10, 2007* (Thessaloniki, 2008), 31–48, esp. 41, fig. 13.
72. Several important examples were copied through application of geometrical procedures, including the Kathisma of the Virgin in Palestine; see Rina Avner, "The Recovery of the Kathisma Church and Its Influence on Octagonal Buildings: One Land, Many Cultures," *Archaeological Studies in Honour of S. Loffreda*, ed. G. C. Bottini, L. Di Segni, and L. D. Chrupsala (Jerusalem, 2003), 173–86, esp. 183 ff.; also Giorgios P. Lavvas, "The Kathisma of the Virgin: A Major New Shrine," ΕΚΒΜΜ Δελτίον-*Newsletter* 2 (2001): 60–101, esp. 90–91, linking the monument to Santo Stefano Rotondo in Rome and Saint Philip in Hierapolis.
73. Demetra Petrou and P. Androudes, "Οι βυζαντινοί ναοί του Αγίου Νικολάου και των Εισοδίων της Θεοτόκου στην Άτταλη Ευβοίας," in *Αρχαιολογικό Έργο Θεσσαλίας και Στερεάς Ελλάδος. Πρακτικά Επιστημονικής Συνάντησης*, Volos 27/2–2/3 2003, vol. 1 (Volos, 2006), 1165–84.
74. On Western pilgrimage architecture, see Robert G. Ousterhout, *The Blessings of Pilgrimage*, Illinois Byzantine Studies 1 (Urbana: University of Illinois Press, 1990).
75. See Vasilike A. Phoskolou, "Απεικονίσεις του Παναγίου Τάφου και οι συμβολικές προεκτάσεις τους κατά την ύστερη βυζαντινή περίοδο," *DCHAE*, ser. 4, vol. 25 (2004): 225–36, with related bibliography, esp. 227, 233,

and 234: ". . . models in some manuscript and either copied a 'Holy Sepulchre', or he borrowed an architectural work and turned it into the most important monument in Christendom, adding its particular feature, namely the two oil-lamps"; and Mamaloukos, "Ζητήματα σχεδιασμού." See also Ioannēs Dēmakopoulos, "Παραστάσεις εκκλησιών της Κωνσταντινούπολης, της Βενετίας και της Κρήτης σε φορητές μεταβυζαντινές εικόνες," *DCHAE*, ser. 4, vol. 1 (1980–81): 181–197, pls. 35–42.

76. The event is mentioned by Epiphanios the Wise in his letter to Cyril of Tver, where he sought refuge when Edigü, Emir of the Golden Horde, attacked Moscow in 1408–9; see Cyril Mango, *The Art of the Byzantine Empire, 312–1453: Sources and Documents* (Toronto: University of Toronto Press, 1993[3]), 256–58; a manuscript of 1415 has been published by V. N. Lazarev, *Feofan Grek i ego škola* (Moscow: Gosudarstvennoe izdatel'stvo Iskusstvo, 1961), 113 ff.
77. Mango, *Art of the Byzantine Empire*, 258.
78. On the third dimension as an allusion to the Other World, see Stevović, *Kalenić*, 170.
79. See Bychkov, *Αισθητική*, 110 ff, 188 ff., esp. 189; and Oskar Wulff, "Das Raumerlebnis des Naos im Spiegel der Ekphrasis," *BZ* 30 (1929–30): 530–39, esp. 539.
80. Discussed by Bychkov, *Αισθητική*, 110, ff., 189, see also Wulff, "Raumerlebnis," 530–39.
81. On this term and its significance, see Oreopoulos, *Le modèle spatial*, 113. Within the framework of EKBMM on "Architecture as Icon," architect M. Michelakis searched dictionaries with a goal different from that of Oreopoulos.
82. This point in relation to illusion is discussed by Stevović, *Kalenić*, 170; see also André Chastel, *Art et humanisme à Florence au temps de Laurent Le Magnifique* (Paris: P.U.F., 1961): 131, Oreopoulos, *Le modèle spatial*, 13–14.
83. See relevant discussion by Yannēs Yerasēs in *Η εικόνα ως οντολογία του αγαθού*, passim, esp. 16 and 45 ff.
84. See the discussion on this point by Bychkov, *Αισθητική*, 116–117.
85. On the question of the relationship between verbal image and visual image and on the views of Gregory of Nyssa and the Cappadocian fathers, see Bychkov, *Αισθητική*, 120–121.
86. The question touches upon the still-open issue of the exact identity of the architect.
87. I use this term instead of "architect" because it has not been clear whether in Byzantium architecture was produced by those possessing relevant training or experience.
88. For an analysis of the presence of terms in dictionaries, see Oreopoulos, *Le modèle spatial*, 114, 116.
89. The inscription is found on the first reinforcement arch at the exonarthex of the church of Bogorodica Ljeviška. It indirectly refers to the remuneration of the two master masons, Nikola and Astrapa, who jointly built and decorated the church; see Draga Panić, "O natpisu sa imenima protomajstora u eksonarteksu Bogorodice Ljeviške," *Zograf* 1 (1966): 21–23 [Serbian with French abstract], with earlier bibliography. See also Djurdje Bošković, "O nekim našim graditeljima i slikarima iz prvih decenija XIV veka," *Starinar* 9–10 (1959): 125–31.
90. See Gordana Babić, "Mihailo Proelevsis, solunski slikar ranog XIV veka" [Michel Proeleusis, un peintre de Thessalonique du debut du XIV siécle], *Zograf* 12 (1981): 4–8.
91. Evangelia Hadjitryphonos, "Αρχιτεκτονικός σχεδιασμός στην πρώτη βυζαντινή χιλιετία: Κωνσταντινούπολη–Θεσσαλονίκη," *Χριστιανική Θεσσαλονίκη και Κωνσταντινούπολις από του τετάρτου μέχρι του δεκάτου αιώνος. Κ' Διεθνές Επιστημονικόν Συμπόσιον "Χριστιανική Θεσσαλονίκη," Ι. Μ. Βλατάδων 2006* (Thessaloniki: Vlatadon Monastery, in print).
92. See also Oreopoulos's view on drawings in *Le modèle spatial*, 120 ff.
93. On this discussion, see ibid., 70 ff., 76, 83 (on hierarchy).
94. Ibid.
95. Hadjitryphonos, "Αρχιτεκτονικός σχεδιασμός," where the temples at Attale, Euboia, are discussed; for related drawings, see Petrou and Androudēs, "Οι βυζαντινοί ναοί του Αγίου Νικολάου," 1165–84; see also S. Mamaloukos, "Ζητήματα σχεδιασμού" and "Η προσέγγιση της διαδικασίας του σχεδιασμού στη βυζαντινή αρχιτεκτονική μέσα από τη μελέτη των μνημείων," in *Architectural Models in Medieval Architecture*, 37–48.
96. *Procopii Caesariensis Opera Omnia*, rec. J. Haury, vol. IV περί κτισμάτων libri VI, ed. Gerhard Wirth (Leipzig, 1964), 8–9 (B173, P22), *Προκοπίου Καισαρέως Περί κτισμάτων*, trans. Sofia Kokkinou-Manta, Apostolos Tzaferopoulos, ed. and comments by Apostolos Tzaferopoulos (Athens, 1996), 32–33 (P5, B 174, 24) on preparation and modifications of drawings. On the model, note 129, and Procopius, *Buildings: General Index*, with an English translation by H. B. Dewing with the collaboration of Glanville Downey (Cambridge: Harvard University Press, 1996[5]), 10–11.
97. Cyril Mango, *Sources and Documents*, 30–32.
98. See Oreopoulos, *Le modèle spatial*, 48, ff., where the author discusses his view on the epistemological obstacles that did not permit interdisciplinary relations.
99. On harmonic proportions, see note 8 above and Čanak-Medić, "Teorijska sprema."
100. On the role of chance in Byzantine philosophy, see the discussion in Oreopoulos, *Le modèle spatial*, 120–122.
101. See details on this topic in Vasilikē Tourptsoglou-Stephanidou, *Περίγραμμα Βυζαντινών Οικοδομικών Περιορισμών* (Thessaloniki: Εταιρεία Μακεδονικών Σπουδών, 1998), passim.
102. Čanak-Medić, "Postupci," 33 ff.
103. On the drawings of Villard de Honnecourt, see Carl F. Barnes Jr., *Villard de Honnecourt: The Artist and His Drawings. A Reference Publication in Art History* (Boston: G. K. Hall, 1982) and M.-T. Zenner, "Villard de Honnecourt and Euclidian Geometry," *Nexus Network Journal* 4, no. 2 (2002): 65–78, which includes earlier bibliography.
104. Leon Battista Alberti, *On the Art of Building in Ten Books*, Book 2, trans. Joseph Rykwert, N. Leach, and R. Tavernor (Cambridge, Mass.: MIT Press, 1988), 34. For Theophanes, see notes 76 and 77 above.

105. See Alberti, ibid., xii, xiii.
106. For more information on this view, see Lampl, "Schemes," 9 and Wulff, "Raumerlebnis," 539.
107. Similarly, contemporary architectural thinking and expression is defined by the representation technology used.
108. See Mioni, *Paleografia greca*, 25 ff.; about paper, 37 ff.
109. Ackerman, *Origins, Imitation, Conventions*, 27–65 and esp. 31.
110. For an assessment of Villard as a middle-brow architect, see ibid., 31.
111. See discussion and comments in ibid., 32–33.
112. The drawing was published with a commentary by Fatsea, "Η αινιγματική σχέση"; see esp. 199, fig. 1.
113. Ibid.
114. On this hypothesis, see Hadjitryphonos, "Αρχιτεκτονικός σχεδιασμός."
115. I refer to the analysis by Oreopoulos, *Le modèle spatial*, 186–95, where he meticulously states his arguments.
116. The three-storied building features techniques that resemble those of Egypt and Mesopotamia, while form, construction system, load-bearing structure, dome, and mosaic decoration display Byzantine influences. It is equipped with an innovative ventilation-cooling-heating system, where air constantly flows and cooling is obtained through an exceptionally interesting system of water circulation involving a network of drains and spouts inside and outside the building. See Giuseppe Caronia, *La Zisa di Palermo: storia e restauro* (Rome: Laterza, 1982); Vittorio Noto, "Les palais et les jardins siciliens des rois normands," *Trésors romans d'Italie du Sud et de Sicilie* (Milan: Elio Sellino, 1995); Giuseppe Caronia and Vittorio Noto, *La Cuba di Palermo, Arabi e Normanni nel XII secolo* (Palermo: Giada, 1988).
117. For this observation and analysis, see Slobodan Ćurčić, *Gračanica: King Milutin's Church and Its Place in Late Byzantine Architecture* (University Park: Penn State University Press, 1979), 50, fig. 20 (compared to fig. 18 and photos 4, 6, 7); see also fig. 102 and the analysis of volumes.
118. We note the significance of culture and the relationship of knowledge and language. The gap betwen the written and the spoken form of the language was decisive in the West; see more on this topic in Günter Binding, *Der früh- und hochmittelalterliche Bauherr als Sapiens architectus* (Darmstadt: Wissenschaftliche Buchgesellschaft, 1998), esp. 101–12, but in Byzantium things were different.
119. Konstantin Armenopoulos, *Πρόχειρον νόμων ή Εξάβιβλος*, ed. K. G. Pitsakis (Athens, 1971), 121, line 30: "Περί εναλλαγής πινσού και κίονος," and Panos Theodoridēs, "Εναλλαγή πινσού και κίονος (Φίλιππου Ωραιόπουλου, 'Ο νεοελληνικός λόγος για την αρχιτεκτοινική και την πόλη)," book review, *Εντευκτήριο* 11, no. 45/3 (Winter 1998–99): 129–33, a detailed criticism and presentation of the book by Philippos Oreopoulos, esp. p. 130 about the particular regulation. See also generally in Tourptsoglou-Stephanidou, "*Οι 'νόμοι' του Ιουλιανού του Ασκαλωνίτη*," 79–119, esp. 83, 100 ff.
120. Ibid.
121. See a typical example: Hagia Sophia at Thessaloniki.
122. A number of scholars have dealt with systems of geometrical proportions of buildings; on this issue, see note 8 above. One could actually argue that the aspect of proportions underscored by numerous scholars is perhaps of less importance in relation to static achievements. Although proportions were used on various occasions, there is no evidence that they were subject to real control by the constructors.
123. The verse structure aimed at facilitating memorization. I am indebted to Panos Theodoridēs for this observation.
124. As it transpires from a treatise on geodesy in the Codex Laurentianis, 15 (II.6), p. 64 ff. and esp. p. 67. On notaries, see Erich Schilbach, *Byzantinische metrologische Quellen* (Düsseldorf: Brükken-Verlag, 1970), 64–73 and esp. 67.
125. See Eleutheria Papayanni, *Μορφές οικοδομών κατά την ύστερη βυζαντινή περίοδο. Πληροφορίες από νομικά έγγραφα* (Athens: Horn Foundation, 1995), which includes earlier bibliography, esp. p. 12 ff.; also Denise Papachrysanthou, "Maisons modestes à Thessalonique au XIV siecle," *Αμητός: Στη μνήμη Φ. Αποστολοπούλου* (Athens: Asia Minor Studies Center, 1984), 254–67. It is useful to compare the current topographical concepts as depicted in known fiscal documents in the West such as the 11th-century Domesday Book (William the Conqueror, 1028–1087); for a general discussion, see Elizabeth Hallam and David Bates, *Domesday Book* (Gloucester: Tempus, 2001).
126. See "90. Periorismoi signés par Dèmètrios Apelméné", Fevrier, indict. 13/a.m. 6808 (1300), *Actes de Lavra* II, *De 1204 a 1328*, ed. Paul Lemerle, André Guillou, Nicolas Svoronos, and Denise Papachrysanthou (Paris: P. Lethielleux, 1977) (στο εξής *Lavra II*), p. 77–95 esp. 90, where there exist two types of measurements; and see Theodoridēs, "Εναλλαγή": "The coexistence of old and new measurement principles furnished extremely erroneous results. Byzantines considered that any polygon could be reduced to an ideal square." I wish to express my thanks to the author for indicating sources.
127. See in relation to the above note and the "107. Prostagma d'Andronique II Paleologue" (1.28, 31), octobre indict. 3 (1319), *Lavra II*, 177–79, on the basis of which restrictions were imposed: "108. Periorismoi signés par Pergamènes et Pharisées (1321), *Lavra II*, 180–219 and the act "109. Praktikon de Pergamènes et Pharisées," janvier indict. 4 a.m. 6829 (1321), pp. 220–78. See also Theodoridēs, "Εναλλαγή": "A polygon is subdivided in triangles whose area is calculated as it is today, by multiplying base by height and dividing the result by two (the so-called *kata kephalê kai poda*)."
128. On these types of measurements, see Schilbach, *Metrologie*, 244 ff. To demonstrate the significance, Theodoridēs ("Εναλλαγή") mentions that even today Athonite monasteries, where different metrological principles coexist, consider they possess terrains of an area different from that measured in the metric system (see Προηγ. Theophilos Vatopaidinos, "Χρονικόν περί της ιεράς και σεβασμίας Μεγίστης Μονής Βατοπαιδίου

Αγίου Όρους," *Μακεδονικά* 12 (1972): 71–121, particularly 97, where there is mention of the area of the *metochion* at Ermyleia).

129. Schilbach, *Metrologie*, 23 ff.

130. See Theodoridēs, "Εναλλαγή," where there is a reference to medieval transaction contracts, such as the concession of a large quarter of Constantinople to the Pisans and Genoese at the end of the twelfth century, where the existence of theoretical models and operational manuals is so intense that it constitutes unique proof that medieval education flourished long before the Crusades; see in general Charles Homer Haskins, *The Rise of Universities* (New York: Henry Holt, 1923); see also S. Panagopoulos, "Η ανώτατη εκπαίδευση στο Βυζάντιο," 4th International Conference: *Η παιδεία στην αυγή του 21ου αιώνα. Ιστορικο-συγκριτικές προσεγγίσεις*, 4–6/10-2002 (Patras: Ergastērio Istorikou Archeiou Neoellenikēs kai Diethnous Ekpaideusēs, 2008).

131. On this medieval concept, see Günter Binding and Susanne Linscheid-Burdich, *Planen und Bauen im frühen und hohen Mittelalter* (Darmstadt: Wissenschaftliche Buchgesellschaft, 2002), chap. 4, 73–100 and esp. 88 about the transmission of examples and ideas in the Middle Ages; also Binding, *Sapiens architectus*, 6 ff. A useful study on the role of the architectural model is by K. Michalopoulou, "Η αναπαράσταση ως μεταφορική έκφραση," in *Η αναπαράσταση ως όχημα αρχιτεκτονικής σκέψης*, University of Thessaly, Dept. of Architecture (Volos, 2006), 328–35, esp. 332–33.

132. See Michalopoulou, "Η αναπαράσταση," 333; and on the definition of the model, see Karen Moon, *Modeling Messages: The Architect and the Model* (New York: Monacelli Press, 2005), 11 ff.

133. See esp. "Architectural Likenesses," cited in note 10 above, and "Models and Plans of Architecture in Classical Antiquity," *JRA* 10 (1977): 77–94.

134. *Architectural Models in Medieval Architecture* (as in note 64 above), which includes discussions on many aspects of the matter as well as earlier bibliography, while the proceedings of *The Representation as Vehicle of Architectural Thought Conference* (Athens, 2006), which was organized by the University of Thessaly's Department of Architecture, contain a number of useful ideas helpful in understanding the question in a broader context.

135. For Egyptian models, see Albert C. Smith, *Architectural Model as Machine: A New View of Models from Antiquity to the Present Day* (Oxford: Architectural Press, 2004), 8 ff.; for earlier bibliography, see Čedomila Marinković, *Slika podignute crkve, Predstave arhitekture na ktitorskim portretima u srpskoj umetnosti* (Belgrade: Princip Bonart Press, 2007), 14–16, esp. 16.

136. As Smith, ibid., 10. As Haselberger, "Architectural Likenesses," particularly his discussion of the temple at Didyma. See note 10 above.

137. Smith, *Architectural Model*, 10–11; and J. J. Coulton, *Ancient Greek Architects at Work: Problems of Structure and Design* (Ithaca, N.Y.: Cornell University Press, 1977) and "The Second Temple of Hera at Paestum and the Pronaos Problem," *JHS* 95 (1975): 13–24, where the author looks at design procedure through the relationship between outer and porch colonnades.

138. See Taylor, *Roman Builders*, 32–35, with related bibliography.

139. See Varalis, "Μακέτες ή κτήρια?" 30–32, where this issue is discussed and relevant bibliography is included; E. Will, "La maquette de l'adyton du temple A de Niha (Beqa)," in *Le dessin d'architecture dans les sociétés antiques*, Actes du colloque de Strasbourg, 26–28 janvier 1984 (Leiden: Brill, 1985), 277–81, figs. 1–3; Taylor, *Roman Builders*, 32, fig. 7.

140. Taylor, ibid., 32–35.

141. S. Gregorii Nysseni, *PG* 46, p. 665: από τον Λόγο Γ΄: εἰς το ἅγιον Πάσχα και περί της αναστάσεως, ελέχθη τη μεγάλη Κυριακῇ; Οὐκ εἴδετε τοὺς μηχανικοὺς ὅπως τῶν μεγάλων καὶ ἐξαισίων οἰκοδομημάτων ἐν ὀλίγῳ κηρῷ τάς μορφὰς καὶ τοὺς τύπους προσαναπλάττουσιν; Καὶ ἐν τῷ μικρῷ λόγος τὴν αὐτὴν ἔχει δύναμιν ἐν ταὶς πολλαὶς καὶ μεγάλαις κατασκευαίς. Μέγας ὁ οὐρανός, τεχνικόν του Θεοῦ δημιούργημα. See also *In sanctum Pascha oratio* III, ed. G. Heil et al. (Leiden: E. J. Brill), from *CPG* II, 219 and Varalis, "Μακέτες ή κτήρια," 24, nn. 10 and 11.

142. O. Benndorf, "Antike Baumodelle," *ÖJh* 5 (1902): 175–95, a study that includes the largest number of sources, such as references by ancient authors and information from inscriptions on models-*paradigms* made of wax, wood, and rarely stone.

143. For Prokopios on Hagia Sophia, see text and note 96 above.

144. See the representation of the great Süleymaniye Mosque carried out by master masons of Constantinople in a Ms of Sulejman-nameh (1579) in the Turkish Mss Collection at the Chester Beatty Library, Dublin, published by Vladimir Minorski, *The Chester Beatty Library: A Catalogue of the Turkish Manuscripts and Miniatures* (Dublin: Hodges, Figgis, 1958), Ms n. 413 and also in the Surnameh Ms of Murad III (1582) with illuminations by Nakas Osman; see F. Öğütmen, *Miniature Art from the XIIth to the XVIII Century* (Istanbul: Güzel Sanatlar Printing House, 1966), 30, n. 16, and Gülru Necipoglu, *The Age of Sinan: Architectural Culture in the Ottoman Empire* (Princeton and Oxford: Princeton University Press, 2005), 161–76.

145. See Varalis, "Μακέτες ή κτήρια," 5, with related bibliography.

146. This reliquary is kept at the Seleuceia Museum. See Varalis, "Εισαγωγή-Επισκόπιση της έρευνας," in *Architectural Models in Medieval Architecture*, 16, fig. 4, n. 21, with older bibliography); it is highly significant as evidence of the existence of this type of church so much further to the south than all known examples of this type.

147. See Čedomila Marinković, "A Live Craft: The Architectural Drawings on the Façade of Theotokos Evergetis in Studenica (Serbia) and the Architectural Model from Cherven (Bulgaria)," in *Architectural Models in Medieval Architecture*, 55–66, esp. 63 ff., fig. 8; and Varalis, "Εισαγωγή-Επισκόπιση της έρευνας," 16, n. 29.

148. As *artophoria* or bases for processional crosses, etc.

149. See Colin Morris, *The Sepulchre of Christ and the Medieval West from the Beginning to 1600* (Oxford: University Press, 2005), 63; André Bonnéry, "L'Édicule de S. Sepulchre de Narbonne," *Cahiers de Saint-Michel de Cuxa* 22 (1991): 7–42; Varalis, "Μακέτες ή κτήρια," n. 7, and 10 with earlier bibliography; and Ousterhout, "The Temple, the Sepulchre and the *Martyrion* of the Savior," 44–53; Benndorf, "Antike Baumodelle," 175–95.
150. Varalis, "Μακέτες ή κτήρια," 17, ill. 6, including relevant bibliography from which see Helen C. Evans and William D. Wixom, eds., *The Glory of Byzantium: Art and Culture of the Middle Byzantine Era, A.D. 843–1261* (New York: Metropolitan Museum of Art, 1997), 460–61, no. 300 (R. Ousterhout).
151. Varalis, "Μακέτες ή κτήρια," 17, n. 36 with bibliography.
152. Polyviou, "Σχεδιασμός και κατασκευή στη ναοδομία του 18ου αι." (as in note 31 above), n. 34.
153. Among the many such models we note the clay model from Chios (19th century), Saint Eustratius at Thymiana, the church at Pharan Monastery, at Mount Sinai, Omorfokklisia Church in a neighbouring village house, D. Margaritis's clay model of a Byzantine church at the Museum of Byzantine Culture, Thessaloniki, and others.
154. Čedomila Marinković argues in favor of this view in her book *Slika podignute crkve, Predstave arhitekture na ktitorskim portretima u srpskoj umetnosti* (Belgrade: Princip Bonart Press, 2007) (with English abstract: Image of the Completed Church: Representations of Architecture on Founders' Portraits in Serbian and Byzantine Art), which is devoted precisely to this issue.
155. Marinković, *Slika*, 88–90, esp. 90.
156. Varalis, in "Μακέτες ή κτήρια," argues in favor of this view.
157. See the depiction of patrons at Gračanica.
158. Varalis, "Μακέτες ή κτήρια," 30–32.
159. See notes 45 and 141 above.
160. Marinković, *Slika*, the most recent broad study on the question of patron models, see particularly 81–83.
161. In medieval attributions of projects to God, we find an analogy with contemporary attributions of projects to social events or team work, where individual contributions are downplayed.
162. Among the extensive bibliography on this issue, note the article by Radomir Stanić, "Skulptoralni portreti ktitora i majstora na crkvama XV–XVII veka u zapadnoj Srbiji i Sandjaku," *Zograf* 4 (1972): 68–75, which shows how rapidly the depiction of those figures spread to peripheral churches. For the significance of patrons in the medieval West, also see Günter Binding, *Sapiens Architectus*, chap. C, and on the education of patrons, 101 ff.
163. On the model in stone from Cherven, Bulgaria, see Marinković, "A Live Craft," 63 ff., fig. 8; and for the Armenian models, see Christina Maranci, "Architectural Models in the Caucasus: Problems of Form, Function, and Meaning," in *Architectural Models in Medieval Architecture*, 49–54, with earlier bibliography. For an example of a ceramic model, see the Greek edition of this volume, edited by Slobodan Ćurčić and Evangelia Hadjitryphonos (Thessaloniki: Museum of Byzantine Culture and European Center for Byzantine and Post-Byzantine Monuments, 2009), 360–61.
164. Maranci, "Architectural Models in the Caucasus."
165. P. Cuneo, "Les modèles en pierre de l'architecture arménienne," *Revue des Études Arméniennes*, n.s., 4 (1969): 202–15 ; see Maranci, ibid., n. 22.
166. S. Malkhasyants', *Step'anos Tarōnets'woy Asoghkan patmu'tiwn tiezerakan* (St. Petersburg: Tparan I. N. Skorokhodovi, 1885), 28, 250–51, text quoted by Cuneo, ibid., 223 and by G. Ieni, "La rappresentazione del oggetto architettonico dell'arte medievale con riferimento particolare ai modelli di architettura caucasici," in *Atti del primo simposio internazionale di arte armena, 1978* (Venice: San Lazzaro, 1978), 247–92, esp. 261; see Christina Maranci, "The Architect Trdat: Building Practices and Cross-Cultural Exchange in Byzantium and Armenia," *JSAH* 62, no. 3 (2003): 294–305.
167. See Maranci, "Architectural Models in the Caucasus."
168. See the works of Stojaković cited in note 5 above.
169. For the most recent analysis of conventional perspective, see Hubert Damisch and John Goodman, *The Origin of Perspective* (Cambridge, Mass.: MIT Press) and, more recently, Hans Belting, *Florenz und Bagdad: Eine westöstliche Geschichte des Blicks* (Munich: C. H. Beck, 2008), which approaches the issue from the point of view of "history of view," relating Abu Ali Hasan's treatise (11th century) on optics to the Renaissance in Europe. Correlations with Byzantine art are totally ignored.
170. See Florensky, cited in note 6 above; also see the work of Stojaković, cited in note 5 above.
171. See Florensky, cited in note 6 above, and Stojaković, "Arhitektonske skraćenice," 59. Also see the essay by Slobodan Ćurčić in this volume, esp. notes 11–13.
172. Abu Ali Hasan Ibn al-Haitham, whose magnum opus, *The Book of Optics*, best known in the West under the title *Perspectiva*, was a textbook in universities from the thirteenth century onward. Fifty-five of the ninety-five books by Alhazen have survived. See Belting, *Florenz und Bagdad*, 104–14.
173. Speros P. Vryonis, "Byzantine Society and Civilization," in *The Glory of Byzantium*, 5–10 and 17–18, with relevant bibliography.

CATALOGUE

The following objects, which appear in the catalogue of this volume, are not on view at Princeton: numbers 2, 8, 14, 21, 27, 35, 44, 50, 53, 70–72, and 80.